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**ECONOMIC INSECT
REPORT**

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PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

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PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

CORN EARWORM serious on several hundred acres of corn in Greenwood and Abbeville Counties, South Carolina; damaging corn in Umatilla County, Oregon. CORN LEAF APHID heavy on sorghum in Miami County, Kansas, and in Ottawa County, Oklahoma. POTATO LEAFHOPPER increasing on potatoes and alfalfa in southern Wisconsin and on alfalfa in Maryland. (p. 605).

EUROPEAN CORN BORER larvae and pupae heavy in corn in northern Alabama; damage heavier than expected on potatoes on Eastern Shore of Virginia. (p. 606). NORTHERN and WESTERN CORN ROOTWORM feeding extensive on corn in Nebraska; NORTHERN CORN ROOTWORM increasing in Wisconsin. BARLEY THRIPS economic in northeastern North Dakota. (p. 607). ALFALFA WEEVIL damage very serious to moderately severe in Millard County, Utah; damaging in Maine, Ohio, and South Dakota. (p. 608).

MEXICAN BEAN BEETLE unusually heavy in soybeans in Monroe County, Alabama; THRIPS severe on peanuts in southeastern Virginia. (p. 610). COLORADO POTATO BEETLE numbers and damage heavy on potatoes in Naples area, Maine. (p. 612).

BOLL WEEVIL continues heavy in central and southern Alabama; BOLLWORMS increasing throughout same State. (pp. 610, 611).

APPLE APHID flights heavy in north-central Washington; numbers increasing in Maine and Wayne County, Ohio. TARNISHED PLANT BUG damage to fruit heaviest in years in Columbia County, New York. (p. 615).

PALMERWORM defoliation severe on oak in northeastern Ohio. (p. 618). BIRCH LEAF MINER numbers and damage heavy in most areas of Maine. (p. 619).

MOSQUITOES heavy and annoying in some States. FACE FLY very annoying to cattle in Modoc County, California; increasing in other States. (p. 620). CEREAL LEAF BEETLE now established in western fourth of Pennsylvania. GRASSHOPPERS heavy in area of Union County, New Mexico; economic populations in northeastern Colorado and in several areas of North Dakota and Nebraska. (pp. 622, 623).

Detection

Seven specimens of RICE PENTATOMID BUG collected at McClellan Air Force Base, California. (p. 625).

A CONIFER SAWFLY reported for first time in West Virginia. (p. 617).

For new county records see page 625.

Reports in this issue are for week ending June 28 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING JULY 1

HIGHLIGHTS: Temperatures ranged widely but averaged below normal over most of the Nation. Many areas east of the Continental Divide received generous rains.

PRECIPITATION: Tropical storm Candy moved northward across eastern Texas early in the week. The winds decreased so it was no longer a "tropical storm" but it remained an immense rainstorm system as it crossed Arkansas into Missouri, turned northeastward, and continued to Lower Michigan. Numerous stations in Texas received from 5 to 10 inches of rain. Large areas received 3 to 5-inch totals. The torrential rains caused flooding in many local areas. Numerous tornadoes occurred in connection with the storm. One of these destroyed the Morning Star School in the Hot Springs, Arkansas, vicinity besides causing other damage. Other tornadoes occurred from Colorado and Kansas to Iowa and Missouri but, fortunately, most of them hit open country with little or no damage. As the rains drenched the eastern half of the United States, sunny skies prevailed over the western half until late in week when light drizzle began to dampen Washington coast. The weekend brought light snow in the higher Rockies, light rains to the northern Great Plains, and light to locally heavy showers in Missouri, Illinois, and the east coast of Florida.

TEMPERATURE: Hot weather prevailed over the West early in the week. Many desert locations registered maximums exceeding 100° on several days and afternoon readings of 90° or higher were common on Tuesday and Wednesday over most of the area west of the Continental Divide except near the Pacific coast. Temperatures over the West dropped sharply after Wednesday. Medford, Oregon, registered 102° on Wednesday but no higher than 75° on Friday. The temperature at Ely, Nevada, plunged from 90° on Friday afternoon to 23° by Sunday morning. Hot humid weather prevailed over the East early in the week with maximums in the 90's as far north as southern Pennsylvania and early morning temperatures in the 70's as far north as Ohio. The warm humid weather persisted from the Gulf of Mexico to the Ohio River until Tuesday when cooler air began to move into the Great Plains, the Great Lakes region, and New England. By Wednesday morning, the temperatures over the northern Great Plains had tumbled to the 40's. On Thursday afternoon, temperatures from the Great Lakes to the Ohio River were mostly in the 60's but the Great Plains warmed to the 90's. Many stations from western and central Kansas southwestward to the Rio Grande registered 100° to 108° on Friday afternoon. By Sunday afternoon, the East was becoming uncomfortably hot and humid. New York City and Philadelphia registered 94° and Washington 96° on Sunday afternoon. (Summary supplied by Environmental Data Service, ESSA.) Weather continued on page 625.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMY CUTWORM (*Chorizagrotis auxiliaris*) - IOWA - Adults numerous in homes and cars in Woodbury County; outbreak possible. (Iowa Ins. Inf., June 15).

ARMYWORM (*Pseudaletia unipuncta*) - MAINE - Adults moderate in blacklight trap in Monmouth; larval damage to hay in Pownal. (Boulanger, June 25). MARYLAND - Emerging adults averaged 4 per night at Centreville, Queen Annes County. (U. Md., Ent. Dept.). MICHIGAN - Flight peaked June 15, but numbers low. No problems expected in Montcalm County. (Newman). TENNESSEE - Damaged fescue lawns in Knox County. (Williams). SOUTH DAKOTA - Destroyed some corn in Brown County; first report of activity in 1968. (Jones).

ASTER LEAFHOPPER (*Macrosteles fascifrons*) - WISCONSIN - Numbers increased due mostly to emergence of local populations. About 1 percent of population virulent compared with 1.4 percent at same time in 1967. (Wis. Ins. Sur.).

CORN EARWORM (*Heliothis zea*) - SOUTH CAROLINA - Serious on several hundred acres of corn grown for silage in Greenwood and Abbeville Counties. No control application apparent. (Nettles et al., June 25). GEORGIA - Infested ears of sweet corn in Spalding County June 22. (Dupree). TENNESSEE - Early instars feeding on foliage of field corn in Williamson County, damage light. (Quillin). INDIANA - First larvae of season light on sweet corn in sandy soil areas of Jackson, Posey, and Gibson Counties; second and third instars 1 per plant on 0-8 percent of plants. (Huber). OKLAHOMA - Ranged 1-4 per 10 sweeps on alfalfa in southwest counties. (Okla. Coop. Sur.). NEBRASKA - Larvae on less than 1 percent of sweet corn in garden near Lincoln, Lancaster County. (Keith, Beatty). NEW MEXICO - Evident in 50 percent of cornfield at Leasburg, Dona Ana County. (Garcia). ARIZONA - Infested 20 percent of shoots in one field at Yuma, Yuma County. (Ariz. Coop. Sur.). OREGON - Larvae abundant and damaging corn tassels and foliage in Hermiston area, Umatilla County; above normal damage possible later in season. (Every).

CORN LEAF APHID (*Rhopalosiphum maidis*) - INDIANA - First colonies of season on corn in southwest district May 26; less than 1 percent of plants infested. Apterae 5-25 and alates 3-7 per plant. (Huber). ILLINOIS - Alates in whorls in few cornfields, especially in west-southwest section; also on grasses in and bordering corn in central section. (Ins. Sur. Bull.). KANSAS - Heavy; wilted young sorghum in Miami County. (Brooks). Ranged 10-150 per plant on 25-100 percent of plants in Ford, Gray, Haskell, and Meade Counties. Light, 5-15 per plant, on 5 percent of plants in Saline, McPherson, Marion, and Dickinson Counties. (Simpson). OKLAHOMA - Heavy on grain sorghum in Ottawa County. (Okla. Coop. Sur.). CALIFORNIA - Nymphs and adults moderate on corn in Colusa, Colusa County. (Cal. Coop. Rpt.).

GREENBUG (*Schizaphis graminum*) - SOUTH DAKOTA - Surveys on small grain indicate no infestations developing. (Jones).

PAINTED LADY (*Vanessa cardui*) - ILLINOIS - Still present and feeding on soybeans. (Ins. Sur. Bull.). IOWA - Second brood starting. (Iowa Ins. Inf., June 15).

POTATO LEAFHOPPER (*Empoasca fabae*) - WISCONSIN - Population increasing on potatoes and regrowth alfalfa in southwestern and south-central counties. Counts as high as 2 per sweep in some alfalfa. (Wis. Ins. Sur.). INDIANA - All stages ranged 7-21 per sweep on second-growth 12 to 18-inch alfalfa in southern districts; light yellowing in 3 of 12 fields in south-central district. (Huber). MARYLAND - Increasing on alfalfa in State. (Md. Ins. Notes). Adults 14-17 per 20 row feet on snap beans at Hereford, Baltimore County. (U. Md., Ent. Dept.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - KANSAS - Very light, 1-3 per 10 sweeps, in 25 percent of alfalfa fields checked in Kiowa, Comanche, Barber, Haskell, and Meade Counties. None in Ford, Gray, Clark, Pratt, Kingman, Harper, and Sedgwick Counties. (Simpson). SOUTH DAKOTA - Winged and immature aphids 44 per 100 sweeps on alfalfa near Spearfish, Lawrence County, and east of Fruitdale, Butte County. (Jones).

TOBACCO BUDWORM (Heliothis virescens) - MARYLAND - Increasing to 6-10 per acre on Prince Georges County tobacco. (U. Md., Ent. Dept.). OKLAHOMA - Light on tomato in Payne County gardens. (Okla. Coop. Sur.).

TOBACCO HORNWORM (Manduca sexta) - MARYLAND - Second and third instars light and feeding on tobacco in Prince Georges and St. Marys Counties. (U. Md., Ent. Dept.).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - NEW HAMPSHIRE - First hatch June 19 at Hollis, Hillsborough County. (Sutherland). NEW YORK - Fall emergence in cages nearly ended by June 20; trap catches above normal. Hatching evident in whorls on 10+ percent of plants. Mostly second instars with one third instar June 19. Egg masses in Livingston County; no hatch as of June 21. (N.Y. Wkly. Rpt.). MARYLAND - Field corn infestations ranged 0-85 percent in central section and 32-56 percent in southern section. Adults averaged 2 per night in light trap at Centreville, Queen Annes County. (U. Md., Ent. Dept.). Whorl infestations ranged 10-50 percent on advanced plants. (Md. Ins. Notes). VIRGINIA - Damage to potatoes heavier than expected considering low overwintering numbers in fall 1967 on Eastern Shore. Most borers pupating. Few newly emerged females collected night of June 23; adult emergence expected soon. Peak moth flights for second and third broods should occur around July 5 and August 15, respectively, at Painter. Seasonal variation may cause much divergence. Generally, peak moth emergence will occur within 10 days of above dates. Emergence will be "staggered" again in 1968; weekly treatments will be necessary on peppers, peas, and other susceptible crops. (Hofmaster). TENNESSEE - Infested 45-50 percent of 2 south-central area fields; some damage in garden corn. (Quillin, Beeler). ALABAMA - Older larvae heavy and pupation very heavy in early corn, especially sweet corn, in widespread areas of Limestone and other northern counties. (Carter et al.). OHIO - Feeding damage on corn leaves by first larvae of season beginning to appear in Wayne County. (Barry). Hatch and some damage probably over most of State. (Rose). INDIANA - Third and fourth instars 1-3 per plant on 36-72 percent of early tasseling sweet corn in southern districts. Corn less than 24 inches (whorl height) tall. Most fields escaped first-generation damage. Larval mortality 80-100 percent in damaged fields. Larval infestations ranged 4-80 (average 32) percent on 30 to 60-inch field corn; larval mortality 30-90 (average 60) percent. Second and third instars dominant throughout southern districts. (Huber).

MICHIGAN - First-brood flights declined to few occasional specimens in southern areas. Main flight further northward began in Montcalm County June 18, two weeks later than in Lenawee County. (Newman). ILLINOIS - Generally light. Percent infested plants by district: West-southwest 5-40, central 12.5, northwest 15, and west 25. (Ill. Ins. Rpt.). WISCONSIN - Most larvae in second instar in southern counties. (Wis. Ins. Sur.). MINNESOTA - Moths emerging throughout southern half of State. Cool weather kept emergence low. Light trap moth collections very low. Light egg laying and hatch noted in occasional fields. (Minn. Ins. Rpt.). IOWA - Four egg masses per 100 plants June 13 at Ankeny, Polk County, on 22-inch high corn. Hatch June 11 at Winterset, Madison County. (Iowa Ins. Inf.). NORTH DAKOTA - Pupation of overwintering larvae in Cass County 91 percent complete; moth emergence 14 percent. No eggs evident. Earliest corn 24 inches extended leaf. (Frye).

BLACK CUTWORM (Agrotis ipsilon) - ILLINOIS - Damaged waist-high corn in northern area. Recent wet weather in many areas favors development. (Ins. Sur. Bull.).

CORN ROOTWORMS (Diabrotica spp.) - MINNESOTA - Hatch observed in southwest, south-central, southeast, and central districts. First instar counts very low. Numerous larvae on volunteer corn in soybeans reported in Houston County. Hatch late as in 1967. Controls may again be poor in some early fields where insecticide applied at planting. Many applications in soil 9 weeks. (Minn. Ins. Rpt.). IOWA - D. virgifera and D. undecimpunctata howardi most advanced in Knoxville:

D. virgifera - one first instar, 12 second instars, 32 third instars, 4 prepupae. *D. undecimpunctata howardi* - 5 second instars, 2 prepupae. *D. longicornis* - 2 each, second and third instars. (Gunderson). NEBRASKA - Feeding by *D. virgifera* and *D. longicornis* extensive on early planted corn. Larvae up to full grown. Ranged 10-20 per plant at Mead, Saunders County. First adults expected about July 4. Some lodging evident. (Munson). KANSAS - First *D. virgifera* adult of season in Riley County cornfield. (Wilde). Larvae 12-25 per plant. (Simpson). ILLINOIS - *D. virgifera* and *D. longicornis* averaged 30 per plant in some fields of continuous corn in northern half of State. Counts of 100+ per plant will be common in problem fields within week or two. (Ins. Sur. Bull.).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - WISCONSIN - Larvae ranged second to fourth instar in Rock County. Counts low at most sites but numbers moderate even in treated fields. Populations have shown general increase; in some instances, numbers near point to warrant further control. Corn in many fields checked advanced to point that further chemical application no longer feasible with conventional equipment. (Wis. Ins. Sur.). ILLINOIS - Larval average per plant by district: Central 0.5, northwest 2.25, and west 8. (Ill. Ins. Rpt.). OHIO - Hatch expected soon. (Rose).

CORN FLEA BEETLE (*Chaetocnema pulicaria*) - MARYLAND - Still active in Frederick County. Damage ranged 0-85 percent of stand near Thurmont. (U. Md., Ent. Dept.).

CORN SAP BEETLE (*Carpophilus dimidiatus*) - GEORGIA - Infested ears of sweet corn in Spalding County June 22. (Dupree).

A WIREWORM (*Melanotus communis*) - WEST VIRGINIA - Damaging corn intended for silage in Greenbrier County. Some areas in field show 50 percent loss June 17. (W. Va. Pest Ident. Lab.).

CHINCH BUG (*Blissus leucopterus*) - KANSAS - Ranged from 2-5 per sorghum plant (10 percent infestation in border rows) in Saline County to 25 per plant in McPherson and Marion Counties (100 percent infestation in border rows). Very few adults found; mostly in sorghum adjacent to small grain fields. (Simpson).

CORN BLOTCH LEAF MINER (*Agromyza parvicornis*) - MARYLAND - Light; damaged 10 percent of 15-acre field corn planting near Largo, Prince Georges County. (U. Md., Ent. Dept.).

WESTERN FLOWER THRIPS (*Frankliniella occidentalis*) - CALIFORNIA - Adults and nymphs of this species and *Anaphothrips zeae* heavy on field corn in Chico, Butte County. (Cal. Coop. Rpt.).

SLUGS - VIRGINIA - Much damage to sod-planted corn in Pulaski County. (Rowell). MARYLAND - Continue to feed on field corn in central counties. (U. Md., Ent. Dept.). OHIO - *Deroceras* sp. most important corn pest. Damage to corn continued June 20-26 over most of State. (Barry). Very heavy precipitation created favorable conditions in 1968. Most damage in cornfields using minimum tillage and in very moist sod-planted fields. Damage to flowers continues problem in various areas. (Miller, Stockdale).

SMALL GRAINS

BARLEY THRIPS (*Limothrips denticornis*) - NORTH DAKOTA - Economic, 3+ per plant, in 30 percent of barley fields in northeastern counties. Average per plant by county: Walsh 1-4.8 (average 1.9); Pembina 0-8 (average 2.3); Cavalier 1-1.2 (average 1.1); Grand Forks 1-5.4 (average 2.3). Early seeded barley fully headed in area. (Kaatz).

APPLE GRAIN APHID (*Rhopalosiphum fitchii*) - VIRGINIA - Single adult collected in oatfield in Nansemond County April 30, 1968. This is first report of species in county. (Allen).

ENGLISH GRAIN APHID (*Macrosiphum avenae*) - WISCONSIN - Continued heavy in late oats in Wood and Fond du Lac Counties. Most oats beyond stage when disease will influence production. (Wis. Ins. Sur.).

RICE WATER WEEVIL (*Lissorhoptrus oryzophilus*) - MISSISSIPPI - Infested 2 Bolivar County farms. Larval control required drying up of fields. (Dinkins).

TURF, PASTURES, RANGELAND

SOD WEBWORMS - NEW YORK - Many trapped at Old Brookville, Nassau County; larval damage should soon be apparent. (N.Y. Wkly. Rpt., June 24). TENNESSEE - Damaged several Knox County lawns. (Williams).

GRASS THRIPS (*Anaphothrips obscurus*) - NEVADA - Infesting timothy in Douglas County; controls required June 14-21. (Martinelli).

BANKS GRASS MITE (*Oligonychus pratensis*) - WASHINGTON - Damaged bluegrass seed fields in dry areas of Spokane County. (Kelsey, Harwood, June 21).

FORAGE LEGUMES

ALFALFA WEEVIL (*Hypera postica*) - MAINE - Damage continues to increase as alfalfa harvest delayed by wet weather. Much of stands lodged. Larval development and feeding in progress. Larvae 411 per 100 sweeps in planting at Westbrook June 13; currently increasing in this and other areas. (Boulanger, June 25). NEW HAMPSHIRE - Collected June 9 at Whitefield, Coos County, for new county record. (Sutherland). NEW YORK - In Ulster County: Larvae declining rapidly, pupal cases increasing, not all second growth needs stubble sprays. In Allegany County: Extensively damaged nearly all stands, residual infestation on new growth where first crop sprayed, no pupae as yet; alfalfa starting bloom. In Livingston County: Larvae peaked about June 14, pupae June 18, but no adults as of June 24; serious infestations in few fields scattered through county; of 10 percent of alfalfa sprayed, 80 percent sprayed after harvest. (N.Y. Wkly. Rpt.). MASSACHUSETTS - Counts per 100 sweeps June 15-20 by county: Hampshire (5 fields)-adults 6.4 (range 1-15), larvae 340 (range 66-459); Berkshire (2 fields) - adults 16.5 (range 9-24), larvae 415.5 (range 332-499). (Miller). RHODE ISLAND - Heavy in some Washington County fields. (Field). MARYLAND - Larvae and adults phased out on shore but continue to feed in central sections. Larvae ranged 0-15 per sweep in 4-acre planting near Lewistown, Frederick County. (U. Md., Ent. Dept.). WEST VIRGINIA - Most larvae pupating at harvest. Adults averaged 0.1 and larvae 18 per sweep in 50-sweep sample in Preston County. (Dorsey, June 21). OHIO - Rains past week delayed alfalfa stubble spraying; large and damaging larval populations remain on many untreated fields in northern counties. Larval feeding will soon be over in northern area as well as in southern area. (Rose, June 22). WISCONSIN - Larvae collected in Jefferson and Waukesha Counties. Det. by D.M. Anderson. These are new county records. (Wis. Ins. Sur.). KANSAS - Adult occasionally found on alfalfa in Clark, Comanche, and Barber Counties for new county records. (Simpson).

SOUTH DAKOTA - Continued to damage alfalfa in northern Black Hills. Larvae range up to 5,000 per 100 sweeps and consist of all instars. Teneral adults and pupae present. Adults up to 44 per 100 sweeps. Alfalfa averaged 18 inches high. First cutting 25 percent complete. (Jones, Walstrom). UTAH - Damage very serious in Lynndyl area alfalfa fields and moderately severe in Leamington fields, Millard County. (Knowlton, June 20). OREGON - Larvae averaged 1 per 10 sweeps and 0.8 per sweep in 2 fields 10-13 miles south of Albany, Linn County, June 24; one adult taken. Damage negligible. This represents most southerly collection to date in Willamette Valley. (Larson). Larvae averaged 0.8-1 per sweep in 2 fields at Kiger Island, Benton County, June 20; one adult taken. (Brown). All infestations in new-growth alfalfa. (Westcott).

CLOVER LEAF WEEVIL (Hypera punctata) - WISCONSIN - Few adults appearing in alfalfa in southern counties. (Wis. Ins. Sur.).

ROSE CHAFER (Macrodactylus subspinosus) - MICHIGAN - Adults 90-140 per 200 sweeps in 3 alfalfa fields each in Hillsdale, Branch, and St. Joseph Counties. (Newman, June 24).

ALFALFA CATERPILLAR (Colias eurytheme) - NEW MEXICO - Counts per 25 sweeps in alfalfa averaged 45-50 at Artesia, Eddy County (Mathews); 0-4 at Questa, Taos County (Heninger, Dickerson); 5 at Mesquite, Dona Ana County (Elson).

BRISTLY CUTWORM (Lacinipolia renigera) - MICHIGAN - Collected 58 specimens at light trap in Montcalm County. Subsequent larval populations should be watched next 2-3 weeks. (Newman, June 24).

GREEN CLOVERWORM (Plathypena scabra) - INDIANA - Larvae ranged from 1 per 5 sweeps to 2 per sweep on alfalfa in southern districts. (Huber). OKLAHOMA - Averaged 3-5 per 10 sweeps in Harmon County alfalfa fields. (Okla. Coop. Sur.).

ZEBRA CATERPILLAR (Ceramica picta) - NEVADA - Early instars heavy and spotted on alfalfa in Carson Valley, Douglas County, and Mason Valley, Lyon County. (Martinelli).

PEA APHID (Acyrtosiphon pisum) - MARYLAND - Increasing throughout State due to cool, wet weather; ranged 2-15 per sweep on second growth in central area. (U. Md., Ent. Dept.). WEST VIRGINIA - Averaged 16 per sweep in 50-sweep sample in Preston County alfalfa, low populations in cut fields in Eastern Panhandle. (Dorsey, June 21). INDIANA - Ranged 8-24 per sweep on southern area alfalfa. (Huber). WISCONSIN - Marked decrease noted in southwest area alfalfa; counts about one-third those of previous period. Highest counts 50 per sweep. Decline due to parasitism, predation, rain and wind, dispersion, and in some instances to insecticides. (Wis. Ins. Sur.). NEVADA - Counts per sweep averaged 100-150 in Mason Valley, Lyon County, alfalfa and 30 in Oroville, Humboldt County. (Lundahl, Peters).

LYGUS BUGS (Lygus spp.) - NEVADA - Adults averaged 4 per sweep in previously sprayed alfalfa seed fields in Dixie Valley, Pershing County. (Adams). NEW MEXICO - Averaged 15-20 per 25 sweeps in alfalfa at Artesia, Eddy County. (Mathews). KANSAS - Ranged 5 to 15 per 10 sweeps on alfalfa in the southwest and south-central districts. (Simpson).

TARNISHED PLANT BUG (Lygus lineolaris) - INDIANA - Nymphs and adults 4-9 per sweep on alfalfa in southern district. (Huber). OKLAHOMA - Ranged 15-20 per 10 sweeps in Harmon County alfalfa field. (Okla. Coop. Sur.).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - KANSAS - Ranged 2-10 per 10 sweeps on alfalfa in Pratt, Kiowa, Comanche, Barber, Clark, Meade, Haskell, Gray, and Ford Counties. (Simpson).

MEADOW SPITTLEBUG (Philaenus spumarius) - IOWA - Adults averaged 11 per sweep in alfalfa and red clover in south-central area. (Iowa Ins. Sur.). OHIO - Averaged 67 adults per sweep in 35 acres of Knox County red clover; damage estimated at 60 percent and weight loss at 50 percent. More abundant than usual this year generally statewide. (Rose, June 15). WEST VIRGINIA - Adults averaged 10 per sweep (50-sweep samples) in Preston County. Low in cut alfalfa in Eastern Panhandle. (Dorsey, June 21).

SPITTLEBUGS - MICHIGAN - Ranged 1,800-3,200 per 200 sweeps on alfalfa in Hillsdale, Branch, and St. Joseph Counties. (Newman, June 24).

LEAFHOPPERS - WEST VIRGINIA - Aceratagallia sanguinolenta, Agallia constricta, and Leptaspis fabae light in alfalfa; averaged 0.6 per sweep in Preston County. Population heavier in cut alfalfa; averaged 2 per sweep in Eastern Panhandle. (Dorsey, June 21).

SOYBEANS

MEXICAN BLAN BEETLE (Epilachna varivestis) - ALABAMA - Adults and larvae unusually heavy in many fields in Monroe County. Destroyed 50 percent of foliage in 2 large fields; lighter feeding in 6 other fields. Controls being applied in some fields. (Ledbetter, Sellers). VIRGINIA - Late instars and pupae averaged 1 per 10 leaves in Dinwiddie County field, only field reported with advanced stages in 1968. Egg laying more common. (Allen).

FLEA BEETLES - TENNESSEE - Very light in most fields in central area. Halticus bracteatus ranged 40-80 per 100 row feet in 2 late-planted Williamson County fields. (Quillin).

PEANUTS

COWPEA APHID (Aphis craccivora) - VIRGINIA - Lighter than in 1967; increase light in Sussex and Dinwiddie Counties. (Smith).

THRIPS - VIRGINIA - Severe in untreated fields in Nansemond, Isle of Wight, Sussex, and Dinwiddie Counties. (Smith).

SPIDER MITES - GEORGIA - Heavy June 22 in Terrell County field. (Locke).

COTTON

BOLL WEEVIL (Anthonomus grandis) - SOUTH CAROLINA - Emergence continues light at Florence; heavy in some untreated fields. Adults 0-2 per 100 squares in untreated fields; none in treated fields. Adults 5 in 9 groups of potted plants (10 plants per group) in trap plot; total to date 18. Total of 114 weevils taken in 6 male attractant traps; total to date 2,739. Percent larval infestations ranged 1.4-24.6 in untreated plots; averaged 1.2 in treated plots. (Taft et al., June 21). Threatening young crop in Coastal Plain; punctured squares as high as 40 percent in some fields. Continuous 5-day control schedule recommended. (Sparks). GEORGIA - Punctured squares June 22 ranged 0-8 (average 3) percent in 6 fields (treated for overwintered weevils), ranged 90-100 percent in 2 untreated fields in Seminole County (Womack, French); no punctured squares in 3 Turner County fields where overwintered weevil control applied; first generation emerging generally in southern area (Womack); punctured small squares in Putnam County (Beckham). ALABAMA - Generally heavy throughout southern and central areas; infestation equals that of 1967 and other "bad" weevil years in some counties. Controls general throughout this part of State. First generation emerging from squares as far north as Montgomery and Autauga Counties. Overwintered weevils continue light in northern area; some live weevils in Tennessee Valley and Sand Mountain counties. (McQueen). TENNESSEE - Few punctured squares in southern counties; squares very scarce. Several adults noted. (Locke). MISSISSIPPI - Generally light throughout State; number of infested fields increased. Total of 156 fields checked in Holmes, Adams, Clay, Sharkey, Issaquena, Hinds, Attala, and Montgomery Counties. Highest infestation 10 percent in 2 fields; lowest one percent; average for all fields 2-3 percent. (Dinkins). No weevils found in terminals in 36 fields in delta counties. Percent punctured squares averaged 2.1 (maximum 6.5) in 5 of 30 fields. Total of 8 weevils collected from winged traps; total to date 41. (Pfirmer et al.). LOUISIANA - Total of 28 weevils collected from cages and 47 from wing traps in sex attractant test in Madison Parish; 11 recovered from cotton plants. Males comprised 26.7 percent of collections from wing traps and 27.3 percent from cotton plants. Total weevils

to date 2,469. Weevils averaged one per 100 squares in 7 of 50 fields; percent punctured squares ranged 2-25 (average 8.7) in 47 of 50 fields. (Cleveland et al., June 27). OKLAHOMA - One weevil found in 30 early fields checked in Jackson, Harmon, Kiowa, and Greer Counties; 1 found in Washita County; none in Grady County. (Okla. Coop. Sur.). TEXAS - Weevils averaged 12 (maximum 82) per acre in 5 of 12 untreated fields in McLennan and Falls Counties; none found in 3 treated fields. Percent punctured squares ranged 0-6.4 (average 2.7) in 8 treated fields and 0.5-20.6 (average 11.6) in 7 untreated fields. No weevils emerged from hibernation cages, collected on flight screens, or trapped in male sex attractant traps past week. (Cowan et al.). For Boll Weevil in High Plains see page 623.

BOLLWORMS (*Heliothis* spp.) - SOUTH CAROLINA - Percent larval infestations ranged 0-0.2 in treated plots and 0-0.1 in untreated plots at Florence. Total of 38 *H. zea* and 4 *H. virescens* adults taken in light trap; total to date 174 *H. zea* and 4 *H. virescens*. (Taft et al., June 21). GEORGIA - Eggs 2-20 (average 6) and larvae 0-10 (average 4) per 100 terminals in Seminole County June 22 (Womack, French); eggs and larvae increasing in most southern areas (Womack). ALABAMA - Increased greatly on cotton statewide, especially in Autauga, Crenshaw, Macon, and Covington Counties. (McQueen). TENNESSEE - Present in most fields. Eggs and larvae 1-11 per 10 terminals; control needed in most cases. (Locke). MISSISSIPPI - Percent punctured squares averaged 2.8 (maximum 19.0) in 25 of 36 fields in delta counties. Eggs averaged 1.6 (maximum 5) per 100 terminals in 13 fields. (Pfrimmer et al.). Scattered and light throughout State. (Dinkins). LOUISIANA - Percent punctured squares ranged 1-8 (average 2.9) in 37 of 50 fields in Madison Parish. Eggs ranged 1-7 (average 2.7) per 100 terminals in 20 of 26 fields and larval infestations ranged 1-3 (average 1.4) percent in 9 of 26 fields. Collected one *H. zea* in blacklight trap. (Cleveland et al., June 27). OKLAHOMA - One *H. zea* larva in 200 row feet in each of 7 fields of 25 fields checked in Harmon, Jackson, Kiowa, and Greer Counties. (Okla. Coop. Sur.). TEXAS - Remain light; slight decrease in McLennan and Falls Counties. Eggs 0-5.4 (average 1.6) and larvae 0-3.5 (average 0.5) per 100 terminals in 15 treated fields; eggs 0-2.9 (average 0.7) and larvae 0-0.3 (average 0.1) per 100 terminals in 17 untreated fields. Percent punctured squares averaged 0.8 in 8 treated and 7 untreated fields. Total of 32 larvae previously collected on wild hosts determined *H. zea*; one larva collected from Texas star determined *H. virescens*. Total to date from all plants 321 *H. zea* and 13 *H. virescens*. Total of 7 *H. zea* and 3 *H. virescens* taken on cotton. NEW MEXICO - Three *H. zea* collected from squares on 30 plants at Mesquite, Dona Ana County. (Elson).

BEET ARMYWORM (*Spodoptera exigua*) - TEXAS - Controls continue in Parmer and Yoakum Counties. Still prevalent on young cotton in Lamb County. Very light to light in Dawson and Terry Counties. (Almand, June 25).

CABBAGE LOOPER (*Trichoplusia ni*) - SOUTH CAROLINA - First 9 moths of season taken in light trap at Florence. (Taft et al., June 21).

STALK BORER (*Papaipema nebris*) - TENNESSEE - Plants occasionally infested over area surveyed. (Locke).

SALT-MARSH CATERPILLAR (*Estigmene acrea*) - LOUISIANA - Collected 4 in blacklight trap at Madison Parish. (Cleveland et al., June 27).

TARNISHED PLANT BUG (*Lygus lineolaris*) - MISSISSIPPI - Moderate to heavy in Yazoo County. Heavier than in past week; controls should be effective. (Dinkins). Averaged 1.2 (maximum 4) per 100 terminals in 20 of 36 fields in delta counties. (Pfrimmer et al.). TENNESSEE - Noted in most fields. Damage to pinhead squares increasing. Controls needed in many fields surveyed, especially where bollworms present. (Locke).

COTTON FLEAHOPPER (*Psallus seriatus*) - TEXAS - Light in Garza, Hale, Lamb, Lubbock, Terry, and Yoakum Counties. Infested 5-30 percent of Mitchell County cotton. (Almand, June 25). Decrease light following heavy rains in McLennan and Falls

Counties. Counts per 100 terminals averaged 11.5 (maximum 31.7) in 15 treated fields and 26.6 (maximum 44.2) in 17 untreated fields. (Cowan et al.). OKLAHOMA - Ranged 10-60 per 100 row feet in 30 early fields in Harmon, Jackson Greer, and Kiowa Counties; 40+ per 100 row feet in 5 of these fields. (Okla. Coop. Sur.).

COTTON APHID (*Aphis gossypii*) - OKLAHOMA - Heavy. 1,500-2,000 per 8-leaf plant, in 2 of 30 early fields in Harmon, Greer, Jackson, and Kiowa Counties; infested less than 5 percent of plants in these 2 fields. (Okla. Coop. Sur.).

THRIPS - TEXAS - Light in Dawson, Gaines, Garza, Hale, Lubbock, Lynn, Terry, and Yoakum Counties. Light to heavy in Floyd and Crosby Counties. Light to medium in Parmer and Lamb Counties. (Almand, June 25). GEORGIA - Moderate damage decreasing June 22 in Spalding County. (Beckham).

SPIDER MITES - GEORGIA - Light to very heavy in most Randolph County fields June 22 (Trussell) and light to heavy in several Terrell County fields (Locke). Heavy in several Dooly County fields (Fulford) and in at least one Sumter County field (French). MISSISSIPPI - *Tetranychus urticae* light to moderate in 6 of 26 fields in delta counties. (Pfrimmer et al.).

TOBACCO

FLEA BEETLES - MARYLAND - Continue heavy in many fields. (Md. Ins. Notes). *Epitrix hirtipennis* damage remains light in St. Marys County; adults ranged 20-46 per 100 plants. (U. Md., Ent. Dept.).

GREEN PEACH APHID (*Myzus persicae*) - MARYLAND - First adults of season June 19 throughout St. Marys County; ranged 8-14 per 100 plants. (U. Md., Ent. Dept.).

HORNWORMS - MARYLAND - Small larvae in St. Marys County. (Md. Ins. Notes).

SUGARBEETS

SPINACH LEAF MINER (*Pegomya hyoscyami*) - COLORADO - Larvae infested 1-15 percent of plants in Weld, Larimer, Boulder, and Morgan Counties and 1 percent in Logan, Sedgwick, Phillips, Yuma, and Washington Counties. (Johnson).

SUGAR-BEET ROOT MAGGOT (*Tetanops myopaeiformis*) - NORTH DAKOTA - Adults peaked in Walsh and Pembina Counties; control underway. (Dogger).

MISCELLANEOUS FIELD CROPS

FOUR-LINED PLANT BUG (*Poecilocapsus lineatus*) - MICHIGAN - Caused much damage to mint. (Connin, June 24).

POTATOES, TOMATOES, PEPPERS

COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) - MAINE - Numbers and damage heavy on potatoes in Naples area. (Boulanger, June 25). NEW HAMPSHIRE - First hatch June 14 at Durham, Strafford County. (Sutherland). VIRGINIA - Light to moderate (generally light) in Accomack and Northampton Counties. (Allen). COLORADO - Nymphs 1-15 per potato plant in untreated fields and 0-3 in treated fields in southwestern Weld County. (Johnson).

POTATO FLEA BEETLE (*Epitrix cucumeris*) - NORTH DAKOTA - Light on potatoes in northeast area; 0-70 (average 14) per 100 sweeps in Walsh, Pembina, and Grand Forks Counties. (Kaatz).

THREE-LINED POTATO BEETLE (Lema trilineata) - NEW HAMPSHIRE - Adults active on potatoes June 14 at Durham, Strafford County. (Sutherland).

A TORTOISE BEETLE (Plagiometriona clavata) - NEW HAMPSHIRE - Common on tomato and potato at Stratham and Durham June 14 and 19. (Sutherland).

STALK BORER (Papaipema nebris) - RHODE ISLAND - Many larvae infested potato stalks in Washington County. (Field).

BEANS AND PEAS

MEXICAN BEAN BEETLE (Epilachna varivestis) - NEW HAMPSHIRE - First report of adult activity June 19 at Stratham, Rockingham County. (Sutherland). NEW JERSEY - First adults of year feeding on snap beans near Centerton; eggs present. (Ins.-Dis. Newsltr.). MARYLAND - First larvae of season damaged 10 percent of 10-acre stand near Hereford, Baltimore County. (U. Md., Ent. Dept.). COLORADO - Adults 0-2 per 100 row feet in most northeastern fields. (Johnson).

SEED-CORN MAGGOT (Hylemya platura) - MAINE - Numbers and damage heavy in bean planting in Troy. (Boulanger, June 25). NEW YORK - Much damage in some bean fields in Orleans, Niagara, and Genesee Counties. (N.Y. Wkly. Rpt., June 24).

CUTWORMS - VIRGINIA - Agrotis ipsilon and Peridroma saucia moths increased sharply during past several nights on Eastern Shore. Damage should not be too severe to potatoes if present soil moisture level retained. (Hofmaster).

PEA APHID (Acyrtosiphon pisum) - WISCONSIN - Decreased from 1 per 10 plants to trace in pea fields due to parasitism, predation, weather, and controls. (Wis. Ins. Sur.).

BEAN APHID (Aphis fabae) - DELAWARE - Isolated in few commercial plantings. (MacCreary, June 27).

COLE CROPS

WESTERN BLACK FLEA BEETLE (Phyllotreta pusilla) - NORTH DAKOTA - Ranged 25-900 (average 262) per 100 sweeps in Pembina County; 10 percent of population P. striolata. Light shot-holing evident. (Kaatz).

DIAMONDBACK MOTH (Plutella xylostella) - NORTH DAKOTA - Larvae 3-300 (average 16) and adults 0-40 (average 13) per 100 sweeps in Pembina County; no damage evident. (Kaatz).

CUCURBITS

STRIPED CUCUMBER BEETLE (Acalymma vittatum) - MISSISSIPPI - Infestation averaged 3 percent in 15 cucumber fields in south-central area. (Dinkins). NEW YORK - Present on squash and cucumbers in Suffolk County. (N.Y. Wkly. Rpt., June 24).

CUTWORMS - WISCONSIN - Larval complex continues to damage cucumbers in scattered fields in Waushara County. (Wis. Ins. Sur.).

SQUASH BUG (Anasa tristis) - OKLAHOMA - Medium on Kay County squash; continues medium in Bryan and Washita Counties. (Okla. Coop. Sur.).

GENERAL VEGETABLES

ARTICHOKE PLUME MOTH (Platyptilia carduidactyla) - CALIFORNIA - Larvae heavy in artichoke buds at Half Moon Bay, San Mateo County. (Cal. Coop. Rpt.).

AN APHID (Capitophorus elaeagni) - CALIFORNIA - Nymphs and adults heavy on artichoke plants at Grimes, Colusa County. (Cal. Coop. Rpt.).

BELT LEAF MINER (Pegomya betae) - NEW HAMPSHIRE - First generation leaving mines June 16 at Durham, Strafford County. (Conklin).

ONION THRIPS (Thrips tabaci) - COLORADO - Ranged 1-15 per plant on northeastern area onions. (Johnson).

TAWNY GARDEN SLUG (Limax flavus) - MAINE - Mostly this species very heavy in most of State; home gardens defoliated, substantial numbers on roadside plants in Oxford County. (Boulanger, June 25).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Carpocapsa pomonella) - WASHINGTON - First full-grown larvae in pear June 14, six days earlier than 1967; damage 5 percent on 5 acres at Fruitvale, Yakima Valley. (Johnson, Gregorich). First brood infested 36 percent of apples June 18 in unsprayed orchard at Parker Heights, Yakima County; 42 percent of larvae full grown; few exit holes, many new entries; first-brood moth emergence continuing. Captured 76 males in a sex lure trap June 12-18 in unsprayed pear orchard at Yakima, Yakima County. (Johnson). - MISSOURI - Severe on unsprayed apples in delta and central areas; on sprayed apples, moderate in west-central area and light in northeast area. (Wkly. Rpt. Fr. Grs., June 25). INDIANA - Some larvae reaching full size and leaving fruit to pupate. Only 10 "straggler" males caught by sex lure trap at Vincennes orchard. (Dolphin, June 24). OHIO - Larval injury on about 10 percent of apples in unsprayed section of Wayne County orchard. Full-grown larva under a collection band indicated first generation beginning pupation in northeastern area. (Forsythe). DELAWARE - Various sized larvae in unsprayed Kent County fruit June 24. (MacCreary). NEW YORK - Entrances in apples probably June 15-16 in Ulster County in abandoned trees but none in sprayed orchards in Columbia County. First hatch in sleeve cages June 24 in Monroe and Orleans Counties. Some showing in Niagara County. (N.Y. Wkly. Rpt.). MAINE - No overwintered adults in bait traps although emergence probably occurred. (Boulanger, June 25).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - KANSAS - Abandoned orchards indicate second generation will begin first week of July. (Craven). INDIANA - Adults still common as emergence of first summer brood tapers off at Vincennes. (Dolphin, June 24). DELAWARE - Larvae full grown in Kent County June 24. (MacCreary). NEW JERSEY - Caught 18 adults in bait jar in Gloucester County June 19-25. (Ins.-Dis. Newsltr.).

AEGERIID MOTHS - NEW JERSEY - Synanthedon pictipes emergence on peach has not peaked as it normally does during end of June. Adults generally low; emergence may be prolonged. (Ins.-Dis. Newsltr.). INDIANA - S. pictipes male captures at Vincennes orchard continue to decline; 198 caught compared to 541 and 425 in previous 2 periods. (Dolphin, June 24). KANSAS - Some Sanninoidea exitiosa adults in Sedgwick County light traps. (Craven). WASHINGTON - Of 20 S. exitiosa cocoons, 11 were pupae in peaches at Parker, Yakima County (Johnson, June 21); half to third-grown larvae in peach fruit June 13 at Wenatchee, Chelan County. (Anthon).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - INDIANA - Flight peak of last period declined in intensity, but adults still common; 1,271 males caught at Vincennes orchard compared to 2,399 previous week. (Dolphin, June 24).

NEW YORK - Scarce in Niagara County. In third to fifth instars at Geneva; adults expected week of July 4. (N.Y. Wkly. Rpt., June 24).

PLUM CURCULIO (*Conotrachelus nenuphar*) - OHIO - Larvae began to leave fallen plums for pupation in Wayne County. (Forsythe). RHODE ISLAND - Scattered adults on peaches in Washington County. (Field). MAINE - Feeding and egg laying in unsprayed orchards. (Boulanger, June 25).

SHOT-HOLE BORER (*Scolytus rugulosus*) - WASHINGTON - Removed 85 adults from 2-year-old cherry tree. Very severe damage at Leavenworth, Chelan County. (Rushmore, June 21).

APPLE APHID (*Aphis pomi*) - MAINE - Increasing; honeydew on foliage. Numbers significant on most terminal growth; increase expected in unsprayed orchards in few weeks. Numbers and damage moderate on flowering crab apple at South Lagrange. (Boulanger, June 25). OHIO - Colonies increasing on Wayne County apple foliage; up to 100 per leaf present. (Forsythe). WASHINGTON - Heavy flights in north-central tree-fruit counties June 21. (Rushmore).

ROSY APPLE APHID (*Dysaphis plantaginea*) - OHIO - Numbers of 25-100 per curled leaf continue on unsprayed apple foliage in Wayne County. (Forsythe).

WOOLLY APPLE APHID (*Eriosoma lanigerum*) - NEW MEXICO - Light to medium on trunks of apple trees at El Prado and Taos, Taos County. (Heninger, Dickerson).

TARNISHED PLANT BUG (*Lygus lineolaris*) - NEW YORK - Damage to fruit heaviest in number of years in Columbia County. (N.Y. Wkly. Rpt., June 24).

TEPHRITID FLIES (*Rhagoletis* spp.) - MINNESOTA - No *R. pomonella* taken in traps during past 7 days. (Minn. Ins. Rpt.). INDIANA - Seasonal peak of *R. pomonella* adult activity on unsprayed and ripening early apples; 459 adults on 2 boards in Vincennes orchard. (Dolphin, June 24). NEW YORK - *R. cingulata* emergence remains slow and steady in Monroe, Orleans, and Niagara Counties. (N.Y. Wkly. Rpt., June 24).

PEAR-SLUG (*Calioira cerasi*) - COLORADO - Heavy on young unsprayed pear trees in Mesa County; foliage loss as high as 25 percent. (Sisson).

EUROPEAN RED MITE (*Panonychus ulmi*) - INDIANA - Continues to increase in apple orchards. Eggs 13.42-42.26, immatures 7.61-24.26, and adults 2.00-8.88 per leaf at Vincennes. (Dolphin, June 24). DELAWARE - Infested Red Delicious in Kent County. (MacCreary, June 27). NEW JERSEY - Building up, 2-3 per leaf on apples which received sprays before bloom and no miticides thereafter. (Ins.-Dis. Newsltr.). NEW YORK - Bronzed foliage in unsprayed orchard. Oil-sprayed orchards very free of mites in most cases. (N.Y. Wkly. Rpt., June 24). MAINE - Males observed June 24 near deutonymph females. First summer-generation deutonymph females should reach adult stage this week; second-generation eggs should appear soon. Development not hindered by wet weather; numbers substantial in untreated or poorly treated orchards. (Boulanger).

PEAR LEAF BLISTER MITE (*Eriophyes pyri*) - WASHINGTON - First adults moving from blisters to new growth on unsprayed pear trees June 10 at Yakima, Yakima County. (Johnson).

SPIDER MITES - SOUTH CAROLINA - Extensively bronzed 50-acre apple orchard in Spartanburg County. (Nettles et al., June 25). NEW YORK - *Tetranychus* sp. relatively heavy week of June 10 in Wayne County. (N.Y. Wkly. Rpt.). KANSAS - No *T. urticae* in Sedgwick County apple orchards. (Craven).

PECAN LEAF PHYLLOXERA (*Phylloxera notabilis*) - OKLAHOMA - Heavy on Delaware County pecan trees; light in Ottawa and Rogers Counties. (Okla. Coop. Sur.).

FALL WEBWORM (*Hyphantria cunea*) - OKLAHOMA - Averaged 1 bag per pecan tree in Payne County; larvae second and third instar. (Okla. Coop. Sur.).

FILBERTWORM (*Melissopus latiferreanus*) - OREGON - Newly emerged adults appeared June 19 in light trap at The Dalles, Wasco County. (Goeden).

CITRUS

Citrus Insect Situation in Florida - Mid-June - CITRUS RUST MITE (*Phyllocoptruta oleivora*) infested leaves in 67 percent of groves (norm 40 percent); 52 percent economic (norm 21 percent). Infested fruit in 60 percent of groves (norm 37 percent); 42 percent economic (norm 17 percent). Population above normal and at high level. Temporary decrease expected, but population will continue in or near high range. Highest districts central, west, south, and east. TEXAS CITRUS MITE (*Eutetranychus banksi*) infested 79 percent of groves (norm 67 percent); 49 percent economic (norm 45 percent). Population approaching summer peak and near normal level for June. Decrease expected in July. Highest districts central, south, and west. CITRUS RED MITE (*Panonychus citri*) infested 59 percent of groves (norm 64 percent); 22 percent economic (norm 41 percent). Population below normal and in moderate range as it approaches summer peak. Slight decrease expected. Highest districts north and east. GLOVER SCALE (*Lepidosaphes gloverii*) infested 88 percent of groves (norm 86 percent); 20 percent economic (norm 32 percent). Population expected to remain in high range through July but below normal summer level. Highest districts east, south, and central. PURPLE SCALE (*L. beckii*) infested 67 percent of groves, 1 percent economic; CHAFF SCALE (*Parlatoria pergandii*) infested 50 percent of groves, 1 percent economic; and YELLOW SCALE (*Aonidiella citrina*) infested 72 percent of groves, 1 percent economic. All 3 scales much below levels of recent years; unlikely to develop heavy infestations in any district. BLACK SCALE (*Aspidiotia oleae*) infested 73 percent of groves (norm 68 percent); 45 percent economic (norm 49 percent). Population increased greatly and at normal high level for June. Further increase expected to keep population above normal and in high range through July. East, central, south, north, and west districts high. An ARMORED SCALE (*Unaspis citri*) infested 16 percent of groves; 4 percent with moderate or heavy infestations. Increase expected. MEALYBUGS infested 64 percent of groves; 1 percent economic. Population will increase and will approach high range. Expected to remain below summer peak levels of past 4 years. Few infestations will be important. WHITEFLIES infested 65 percent of groves; 27 percent economic. Larval numbers entered high range and expected to remain near current high normal level for June. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

SMALL FRUITS

GRAPE CANE GALL MAKER (*Ampelogypter sesostris*) - OHIO - Damaged grapes in numerous vineyards on Bass Islands in Lake Erie. (Still, June 20).

CRANBERRY WEEVIL (*Anthonomus musculus*) - NEW JERSEY - Second-generation adults damaged some new blueberry leaf growth. (Ins.-Dis. Newsltr.).

BLUEBERRY MAGGOT (*Rhagoletis mendax*) - NEW JERSEY - Generally running much higher than last year this time on blueberries. Catch to date in 5 traps each: 581 in field where berries unharvested last year, 108 in adjacent field where berries picked last year. (Ins.-Dis. Newsltr.).

FALL WEBWORM (*Hyphantria cunea*) - NEW JERSEY - In many Burlington County blueberry fields. (Ins.-Dis. Newsltr.).

BLUEBERRY THRIPS (*Frankliniella vaccinii*) - MAINE - Females still feeding and laying eggs on blueberry at Brooklin and Sedgwick June 22; newly hatched nymph noted. Numbers and damage light at Jonesboro. (Boulanger).

ORNAMENTALS

SCARABS - ALABAMA - Phyllophaga forbesi and Cyclocephala immaculata defoliated azaleas, wistaria, and other shrubs in Mobile County. Det. by V.H. Owens. (Robinson, Seibels). NEW HAMPSHIRE - Numbers and damage increasing rapidly June 20. (Mason, Sutherland).

BAGWORM (Thyridopteryx ephemeraeformis) - ILLINOIS - Hatch complete in northern area; larvae feeding on evergreens and other trees and shrubs. (Ins. Sur. Bull.).

A SOFT SCALE (Toumeyella mirabilis) - ARIZONA - Killing mesquite trees in Tucson foothills residential area, Pima County. Det. by R.F. Wilkey. (Ariz. Coop. Sur.).

AZALEA LACE BUG (Stephanitis pyrioides) - GEORGIA - More abundant on azaleas than in past several years in Spalding County. (Tippins, June 22).

FLETCHER SCALE (Lecanium fletcheri) - DELAWARE - Hatch begun June 14 on arborvitae. (MacCreary). OHIO - Hatch of 50-70 percent on taxus, crawlers under mother scales in Columbiana County June 19; most eggs hatched and crawlers dispersing in Highland County June 24. (Ellis, Cooley).

FOREST AND SHADE TREES

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - OREGON - First instars found June 14 at Hermiston, Umatilla County. Peak flight occurred last week of May and first week of June. (Kline). RHODE ISLAND - Pupae on Scotch pine. (Stessel, Field, June 20).

SPRUCE NEEDLE MINER (Taniva albolineana) - RHODE ISLAND - Full-grown larvae infested 1967 needles on blue and Norway spruce; adults in Newport and Washington Counties. (Kerr, Field, June 14). MINNESOTA - Larvae feeding on outside of spruce needles. (Minn. Ins. Sur.).

TORTRICID MOTHS - NEW YORK - Choristoneura fumiferana damaged blue spruce in Nassau County. Adults will be emerging late June to early July. (N.Y. Wkly. Rpt., June 24). OHIO - Argyrotaenia pinatubana pupation begun in Warren County. About 25 percent pupae, remainder larvae. (Campbell). WISCONSIN - First C. pinus pupation noted in Polk County and pupation in Jackson County well underway June 21. (Wis. Ins. Sur.). MINNESOTA - Most C. pinus larvae in fourth instar; some second and third instars present. (Minn. Ins. Rpt.).

LYMANTRIID MOTHS - COLORADO - Hemerocampa pseudotsugata larvae very high (20-40 per 12-inch branch) on blue spruce in southeast Denver, Denver County; larvae light at Fort Collins. (Thatcher et al.). MINNESOTA - Dasychira plagiata apparently increasing slightly in Moose Lake and Willow River area. Serious on jack pine in area in 1961-1963 and in area north of Brainerd in 1963. (Minn. Ins. Rpt.).

JACK-PINE SAWFLY (Neodiprion pratti banksianae) - MINNESOTA - Damaged roadside jack pine north of Park Rapids, Hubbard County; several trees defoliated. (Minn. Ins. Rpt.).

A CONIFER SAWFLY (Neodiprion pratti pratti) - WEST VIRGINIA - Three-year infestation on Virginia pine at Camp Creek, Boone County, determined this species by C.L. Morris. This is a new State record. (Cole, May 22).

SAWFLIES - MINNESOTA - Pikonema alaskensis killed roadside spruce in spots through northern half of State. (Minn. Ins. Rpt.). NEW YORK - Pristiphora erichsonii active in all stages in Onondaga County. (N.Y. Wkly. Rpt., June 24).

WEEVILS (*Pissodes* spp.) - GEORGIA - *P. nemorensis* heavy in recently set white pines in Forsyth County. (Rucker, June 22). NEW HAMPSHIRE - *P. strobi* infested leaders browning and wilting. (Sutherland, June 19).

ADDELIDS (*Adelges* spp.) - CALIFORNIA - *A. cooleyi* eggs and nymphs heavy on Colorado blue spruce at Salinas, Monterey County. (Cal. Coop. Rpt.). OHIO - Second generation of *A. cooleyi* about 75 percent hatched; first instars on Stark County Douglas-fir. (Campbell, June 26). PENNSYLVANIA - *A. abietis* galls starting to open on Norway spruce in Centre County; aphids emerging June 26. (Gesell).

PINE SPITTLEBUGS (*Aphrophora* spp.) - WISCONSIN - *A. parallela* third instars heavy in Oconto County June 12. Spittle masses on most 1967 terminal nodes on smaller trees; masses numerous on larger trees. Nymphs averaged 2.5 per spittle mass with up to 9 masses per tree. About 50 percent adults in Sauk County Scotch pine plantation June 20. Population heavy at this site; common in most other pine areas. Nymphs in fourth and fifth instar in Langlade County June 20. *A. saratogensis* nymphs in last instar June 20 in Clark County and in third instar in Langlade County. (Wis. Ins. Sur.).

PINE NEEDLE SCALE (*Phenacaspis pinifoliae*) - WASHINGTON - Light to heavy on Douglas-fir, blue spruce, Norway spruce, Engelmann spruce, lodgepole pine, and mugho pine at Pullman, Whitman County. (Johansen, June 21). NEW HAMPSHIRE - Crawlers just settled June 18 at Newbury, Merrimack County. (Mason, Hutchins).

PINE TORTOISE SCALE (*Toumeyella numismaticum*) - WISCONSIN - Crawlers appearing in Clark County and at Summit Lake, Langlade County, June 20. (Wis. Ins. Sur.).

AN ERIOPHYID MITE (*Nalepella tsugifoliae*) - OHIO - General infestation of about 2 acres of Canada hemlock in Richland County; some trees completely bronzed. (Walker).

BIRCH CASEBEARER (*Coleophora salmani*) - MAINE - Larvae heavy at Fort Kent, Bucksport (damage severe to ornamental white birch), and Eagle Lake (large white birch stand defoliated) in early June. (Boulanger, June 25).

PALMERWORM (*Dichomeris ligulella*) - OHIO - Severely defoliated oak in Trumbull, Columbiana, and Carroll Counties. Oak damage past 1-2 weeks indicates extensive occurrence probable through much of eastern half of State. (Rose).

MOURNING-CLOAK BUTTERFLY (*Nymphalis antiopa*) - NEW YORK - Defoliated Onondaga County willow. (N.Y. Wkly. Rpt., June 24). UTAH - Larvae injured willow foliage at Ferron, Emery County. (Roberts, Day, June 20).

SATIN MOTH (*Stilpnotia salicis*) - MAINE - Numbers and damage heavy on poplars at South Lagrange. (Boulanger, June 25).

A SATURNIID MOTH (*Hemileuca nevadensis*) - CALIFORNIA - Larvae heavy on poplar and willow trees at Los Banos, Merced County. (Cal. Coop. Rpt.).

UGLY-NEST CATERPILLAR (*Archips cerasivoranus*) - NEBRASKA - Heavy on chokecherry in Halsey National Forest in Thomas County. (Keith, Rai).

YELLOW-NECKED CATERPILLAR (*Datana ministra*) - OREGON - Newly emerged adults appeared in light traps at The Dalles June 19. (Goeden).

CANKERWORMS - WISCONSIN - *Paleacrita vernata* and *Isophila pometaria* infestations heavy in northern Door County. (Wis. Ins. Sur.).

CICADAS - OHIO - Rain and some cool weather brought little change in activity of *Magicicada* spp. June 21-27 in Brood VIII emergence area in northeastern and east-central sections. Oviposition continued and "flagging" more evident. Bird predation apparently depleted numbers in some localized areas. Occurring in various

locations of Jefferson, Columbiana, Mahoning, Trumbull, Portage, and Carroll Counties. (Forsythe). OREGON - Newly emerged adults of Platypedia areolata and Okanagana spp. very abundant, mostly on sagebrush, cottonwood, and willow, near Durkee, Baker County, and at Mitchell, Wheeler County. (Goeden, Oman).

ELM LEAF BEETLE (Pyrrhalta luteola) - NEW MEXICO - Skeletonization heavy on American and Siberian elm foliage at Espanola, Rio Arriba County, and Pojaque, Santa Fe County. (Heninger, Dickerson). NEW HAMPSHIRE - Began hatch June 19 at Durham, Strafford County. (Sutherland). DELAWARE - Very small larvae in Sussex County. (MacCreary, June 27).

IMPORTED WILLOW LEAF BEETLE (Plagioder a versicolora) - PENNSYLVANIA - Heavy local infestations in Franklin County; many willows with 75 percent of leaves skeletonized. (Gesell).

LOCUST LEAF MINER (Xenochalepus dorsalis) - TENNESSEE - Damage very heavy to locust in central area, foliage 80-90 percent discolored. (Quillin). MARYLAND - Damaging foliage of black locust in most areas. (Md. Ins. Notes).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - OREGON - Larvae and adults (mostly dead) taken from elm slash at Nyssa, Malheur County (Goeden).

SCARABS - ALABAMA - Heavy emergence of Phyllophaga forbesi and Cyclocephala immaculata adults defoliated many ornamental oak, pecan, walnut, and elm in southern Mobile County. Det. by V.H. Owens. (Robinson, Seibels).

SAWFLIES - MAINE - Pristiphora geniculata troublesome in Green area. Fenusa pusilla numbers and damage heavy in most areas of State; damage lighter than in 1967 in some areas due partly to wet weather. (Boulanger, June 25). NEW YORK - Second generation of F. pusilla in some Suffolk County areas. Caulocampus acericaulis caused much concern through Upstate area. (N.Y. Wkly. Rpt., June 24). WISCONSIN - F. pusilla adults emerged in Dane County. Reports indicate incidence higher than in 1967. (Wis. Ins. Sur.).

COTTONY MAPLE SCALE (Pulvinaria innumerabilis) - NEW YORK - On dogwood and maple, will soon be entering crawler stage in Nassau County. Major problem on Suffolk County dogwood. (N.Y. Wkly. Rpt., June 24). ILLINOIS - Hatching, young crawlers moving to leaves and branches. (Ins. Sur. Bull.). IOWA - Eggs at Swedesburg, Henry County, and Bremer, Chickasaw Counties, just beginning to hatch. (Iowa Ins. Sur.). WISCONSIN - Crawlers more numerous and fully lining-major veins of silver maple leaves June 25 at Rock County location; feeding on leaves of same host near Dodgeville, Iowa County, June 26. (Wis. Ins. Sur.).

EUROPEAN ELM SCALE (Gossyparia spuria) - NEVADA - Heavy on elms in Douglas, Elko, and Washoe Counties; honeydew heavy on and under trees. (Nev. Coop. Rpt.).

MAN AND ANIMALS

MOSQUITOES - MINNESOTA - During week ending June 21, total of 7,222 females taken in 16 light traps operated by Metropolitan Mosquito Control District; 6,376 were *Aedes vexans*, 20 *Mansonia perturbans* taken. Peak populations of *M. perturbans* expected after mid-July. *A. vexans* present in 1,744 of 2,339 larval samples. Various species of *Culex* occurred in 995 samples. *A. vexans* accounted for 75 percent of total catch in evening and daytime bite collections. Heavy rains continued and cool evenings restricted mosquito flights. Consequently dispersal of recently hatched broods not as great as anticipated. Adults still present in hatching areas; large numbers will move to populated areas with first reasonably warm evening with gentle wind. (Minn. Ins. Rpt.). WISCONSIN - Reports and observations indicate no increase in activity; higher populations impending. Most activity in southern area by floodwater species; *Aedes cinereus* present in isolated areas. Few *A. vexans* present but not of concern. High larval populations in Madison area indicate possible problems. Some mosquito annoyance reported in most areas of State, primarily near woods and in low areas. Some annoyance reported in Oconto County. (Wis. Ins. Sur.). ILLINOIS - Mosquitoes continue high in many areas; becoming another record high year. (Ins. Sur. Bull.). GEORGIA - *Aedes sollicitans* numerous in Glynn County June 22. (Snoddy). KANSAS - Total of 30 females collected on 4 nights in light trap June 13-24 at Manhattan included 20 *A. vexans*, 1 *Culex tarsalis*, 5 *C. pipiens*, and 1 *Orthopodomyia signifera*. Det. by H. Knutson. (Simpson). NEW MEXICO - Mosquitoes heavy in Los Luceros and El Quique areas, Rio Arriba County. (Heninger, Dickerson). UTAH - Annoying in Millard and Juab Counties. (Knowlton, June 20).

SCREW-WORM (*Cochliomyia hominivorax*) - Total of 179 cases reported in U.S. as follows: TEXAS - Atascosa 14, Bee 8, Bexar 4, Brewster 3, Brooks 9, De Witt 10, Edwards 4, Frio 4, Jim Wells 10, Karnes 2, Kenedy 4, Kerr 1, Kinney 7, Kleberg 9, Live Oak 8, McMullen 2, Medina 4, Nueces 2, Pecos 6, Refugio 1, Terrell 4, Uvalde 4, Val Verde 2, Webb 1, Wilson 4, Coleman 1, Dimmit 1, Guadalupe 1, Maverick 1, Starr 2, Hays 1, Real 2, San Patricio 2, Tom Green 1, Willacy 1, Duval 3, Hidalgo 1; ARIZONA - Cochise 4, Graham 2, Maricopa 2, Pima 11, Pinal 4, Santa Cruz 5, Yuma 4; CALIFORNIA - Imperial 3. Total of 537 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Baja California 7, Territorio sur de Baja California 9, Sonora 130, Chihuahua 41, Coahuila 201, Nuevo Leon 38, Tamaulipas 111. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 78,084,000; New Mexico 500,000; Arizona 16,640,000; California 1,520,000; Mexico 72,284,000. (Anim. Health Div., June 29).

FACE FLY (*Musca autumnalis*) - NEW JERSEY - Lighter than usual to date. (Ins.-Dis. Newsltr.). MARYLAND - Increasing in central and southern areas. Adults ranged 0-50 on Holstein cattle in Frederick County and 10-30 per head on 24 Herefords near Upper Marlboro, Prince Georges County. (U. Md., Ent. Dept.). WEST VIRGINIA - Increasing generally on cattle in Preston County; averaged 6-15 per head. Slight increase noted in Monongalia County, averaged 18 per head. (Dorsey, June 21). INDIANA - Averaged 4 per head on pastured cattle in southern districts. (Huber). ILLINOIS - Average per head by district: Southeast 0.2, west-southwest 3.1, central 17.0, west 2.3, and northwest 7.9. (Ill. Ins. Rpt.). WISCONSIN - Some increase noted around dairy barns in Dane County. (Wis. Ins. Sur.). IOWA - Counts per head averaged 8 on 2 Jasper County herds, 11 on 3 Monroe County herds, and 9 on 3 Wayne County herds. (Iowa Ins. Sur.). WASHINGTON - Gradually increasing on beef animals; averaged 10 per head in herd at Pullman, Whitman County. (Telford, June 21). CALIFORNIA - Adults very annoying to cattle in holding pens in Fort Bidwell, Modoc County. (Cal. Coop. Rpt.).

HORN FLY (*Haematobia irritans*) - NEW JERSEY - Lighter than usual to date. (Ins.-Dis. Newsltr.). MARYLAND - Ranged 50-300 per head on 25 steers near Upper Marlboro, Prince Georges County; 0-35 per head on dairy cattle in Frederick County. (U. Md., Ent. Dept.). WEST VIRGINIA - Generally light on cattle in Preston County; averaged 7 per square foot on withers. Averaged 5 per square

foot on withers in Monongalia County. (Dorsey, June 21). GEORGIA - Ranged 50-1,000 per side on untreated beef cattle in Polk County June 22. (Nolan). MISSISSIPPI - Similar to last week. Average per head by county: Adams 300 on 175 animals, Clay 55 on 100, Issaquena 50 on 400, Hinds 21 on 568, Attala 20 on 500, Montgomery 100 on 60 animals. (Dinkins). INDIANA - Ranged 100-300 on untreated cattle in southern districts. (Huber). ILLINOIS - Average per head by district: Southeast 287.3, west-southwest 106.3, central 73.7, west 22.0, and northwest 13.5. (Ill. Ins. Rpt.). IOWA - Averaged near 300 per head on Jasper County herd, 700 per head on 3 herds in Monroe and Wayne Counties. (Iowa Ins. Sur.). NEBRASKA - Present on most herds in Saunders and Lancaster Counties. Averaged 300-400 per head on most animals in 9 herds. (Campbell). UTAH - Annoying some beef herds in Millard County. (Knowlton, June 20).

STABLE FLY (*Stomoxys calcitrans*) - PENNSYLVANIA - High in dairy barns; biting cattle and man in southwestern area. (Gesell, June 21). MARYLAND - Ranged 6-50 per head on Holsteins in Frederick County. Annoying campers on Assateque Island, Worcester County. (U. Md., Ent. Dept.). ILLINOIS - Average per head by district: Southeast 3.2, west-southwest 1.3, central 16.2, west 0.6, and northwest 0.0. WISCONSIN - Building up around dairy barns with some problems reported in Fond du Lac County. (Wis. Ins. Sur.). NEBRASKA - Increasing; averaged 10 per leg on cattle in 4 feedlots checked. (Campbell). OKLAHOMA - Averaged 1-2 per dairy animal checked in Payne County; annoyed man in campground area in McCurtain County. (Okla. Coop. Sur.).

TABANID FLIES - MARYLAND - Horse flies abundant; much annoyance among campers on Assateque Island, Worcester County. (U. Md., Ent. Dept.). WISCONSIN - Deer flies bothersome in Fond du Lac County; active in Oconto County. (Wis. Ins. Sur.). NEBRASKA - Horse flies averaged 1 per animal on herds in low lying pastures; 4-5 on some animals. (Campbell). GEORGIA - Horse flies averaged 1-3 per 10 beef cattle in Polk County June 22 (Nolan); heavy in southern Okefenokee area (Snoddy). MISSISSIPPI - Tabanus spp. averaged 2 per head on 500 animals in Attala County. (Dinkins). OKLAHOMA - *T. quinquevittatus* averaged 10 per cow on a farm in Payne County. (Okla. Coop. Sur.).

BLACK FLIES - WISCONSIN - Continue troublesome and biting in Iron and Vilas Counties. (Wis. Ins. Sur.). MAINE - *Simulium* spp. reaching peak levels statewide. Very heavy in turf areas in East Poland and Orono area; females noted near several plants June 26. (Boulanger).

HORSE BOT FLY (*Gasterophilus intestinalis*) - UTAH - Troublesome at Leamington and Deseret, Millard County, and Nephi and Mona area, Juab County. (Knowlton, June 20).

AN ASSASSIN BUG (*Rhynocoris ventralis*) - OREGON - Young child painfully bitten in Corvallis area, Benton County. Det. by J. D. Lattin. (Every).

BLOODSUCKING CONENOSE (*Triatoma sanguisuga*) - OKLAHOMA - Several causing annoyance in Payne County homes. (Okla. Coop. Sur.).

AMERICAN DOG TICK (*Dermacentor variabilis*) - MAINE - Heavy in Raymond, Westbrook, Sebago, Sebago Lake, Cumberland, and adjacent areas. (Boulanger, June 25). WISCONSIN - Increasing throughout State. (Wis. Ins. Sur.).

A CHIGGER MITE (*Eutrombicula alfreddugesi*) - OKLAHOMA - Heavy; annoyed man in north-central and central areas. (Okla. Coop. Sur.).

BROWN RECLUSE SPIDER (*Loxosceles reclusa*) - INDIANA - Two males collected in Evansville, Vanderburgh County, May 28 and June 3, 1968, and one male taken in Jasper, Dubois County, June 26, 1968. Det. by T.A. Parker. These are new county records. (Huber). OKLAHOMA - Heavy in home in Payne County. (Okla. Coop. Sur.).

MISCELLANEOUS WILD PLANTS

WHITE-LINED SPHINX (*Celerio lineata*) - KANSAS - Larvae heavy in Clay County, feeding mainly on purslane and other weeds. Causing some concern to farmers in area. (Brooks).

WESTERN FLOWER THRIPS (*Frankliniella occidentalis*) - CALIFORNIA - Nymphs and adults of this species and *Sericothrips* sp. on California coffeeberry in Stilson Canyon at Chico, Butte County. (Cal. Coop. Rpt.).

TWO-SPOTTED SPIDER MITE (*Tetranychus urticae*) - CALIFORNIA - Heavy on 160 acres of *Convolvulus arvensis* in Mendota, Fresno County. (Cal. Coop. Rpt.).

BENEFICIAL INSECTS

LADY BEETLES - TENNESSEE - Adults averaged 50-60 per 100 row feet on Williamson County soybeans. (Quillin). OKLAHOMA - *Hippodamia convergens* ranged 3-15 per 100 row feet on cotton checked in southwestern counties. (Okla. Coop. Sur.). SOUTH DAKOTA - Lady beetles high on small grains in 1968 surveys. (Jones).

HEMIPTEROUS PREDATORS - MISSISSIPPI - *Orius insidiosus* increased while *Nabis* spp. decreased on cotton in delta counties. (Pfirmer et al.). OKLAHOMA - *Nabis* sp. averaged 20 per 100 row feet in Jackson County cotton field. (Okla. Coop. Sur.).

ALKALI BEE (*Nomia melanderi*) - WASHINGTON - First males emerging in Pasco and Othello areas of Columbia Basin Project by June 12; no bee fly parasites (*Heterostylum robustum*) yet. (Johansen, Eves).

APHID LIONS - SOUTH DAKOTA - High on small grains in 1968 surveys. (Jones).

PARASITIC WASPS - SOUTH DAKOTA - High on small grains in 1968 surveys. (Jones).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BOLL WEEVIL (*Anthonomus grandis*) - TEXAS - Overwintered populations up to 130 per acre in Mitchell County. One overwintered adult captured in sex attractant trap in Howard County during past week. In Kent County, inside boll weevil control zone, 11 overwintered adults detected in 6 different fields. (Almand, June 25). For Boll Weevil in other areas see pages 610 and 611.

CEREAL LEAF BEETLE (*Oulema melanopus*) - PENNSYLVANIA - Collected in Forest, Clarion, Armstrong, Fayette, and Allegheny Counties for new county records. Now established in western fourth of State. (Eckess, June 21). OHIO - Larvae one per 3 leaves in 14-acre oatfield in Tuscarawas County June 21. (Kirven). Unusually large number of larvae for field in east-central area. (Rose).

CITRUS BLACKFLY (*Aleurocanthus woglumi*) - MEXICO - Total of 36,249 trees inspected on 3,963 properties in 15 municipios of Nuevo Leon and Tamaulipas; 15 additional trees on 3 properties already reported as infested found in Linares. Results negative on 16,904 trees on 1,824 properties in 5 municipios of Sonora and Baja California. (PPC Mex. Reg. May Rpt.).

EUROPEAN CHAFER (*Amphimallon majalis*) - NEW YORK - Mating flight June 19 in Onondaga County. (N.Y. Wkly. Rpt.).

GRASSHOPPERS - NEW MEXICO - Heavy on much acreage in Dry Cimarron area, Union County; controls planned. (Rierson). Spotted in Harding, Quay, Colfax, Santa Fe, Torrance, De Baca, Socorro, Guadalupe, and San Miguel Counties. Hatch not

complete probably due to dry weather. (Powell). Counts per square yard averaged 0-1 north of Capitan, Lincoln County (Eubank, Nielsen) and 0-5 near Hillsboro, Sierra County (Hare). COLORADO - Melanoplus spp. nymphs per square yard on rangeland ranged 5-30 in Wiggins and Fort Morgan area in Morgan County, 8-10 in Sedgwick and Julesburg area of Sedgwick County, 5-10 in Wray area of Yuma County. Entering bordering crops in Wray and Wiggins areas. Controls scheduled. Melanoplus spp. third and fourth instars ranged 4-5 per square yard in cornfields in Masters area, Weld County, and 5-10 in Wiggins area, Morgan County. Damage high in infested fields. (Johnson). KANSAS - Counts per square yard by county: Pratt 6-10 on wheat stubble and alfalfa, 4-7 on pasture; Kiowa 3-5 on roadsides; Ford 6-10 on roadside, 2-5 on pasture; Haskell 3-6 on pasture; Meade 7-9 on pasture; Clark 6-10 on pasture, 8-12 on roadside. Melanoplus sanguinipes, M. differentialis, and M. bivittatus dominant; ranged early instar to adult. (Simpson). NEBRASKA - Noneconomic on rangeland in Keith, McPherson, Arthur, Garden, Banner, Sioux, Dawes, and Sheridan Counties. Troublesome in few isolated spots in fence rows, idle acres, and weed patches in Keith, Garden, Morrill, Scotts Bluff, Sioux, Dawes, and Sheridan Counties; up to 30 nymphs per square yard. M. sanguinipes, M. bivittatus, and M. differentialis dominant. Areas sprayed in 1967 in Scotts Bluff, Morrill, and Banner Counties with only few isolated economic populations. (Bell, Seal, June 21). SOUTH DAKOTA - Some localized infestations already developing. (Jones). NORTH DAKOTA - Scattered and economic in several areas. Marginal and field infestations ranged up to 40 per square yard in Orrin area, Pierce County; soil bank fields heavily infested in area. Development first through fourth instar; M. sanguinipes and M. bivittatus dominant. Heavy in some alfalfa and weedy roadsides in northwestern Richland County. Marginal counts ranged from less than 1 to 40 (averaged 7) per square yard; first through fourth instar present. M. bivittatus, M. sanguinipes, M. packardii dominant. (Brandvik, Grasser). MINNESOTA - Cool, wet weather resulted in mortality of early instars in the central and west-central districts; some third instars found. M. packardii in light soil areas in Sherburne and Anoka Counties ranged third instar to adult. Damage moderate along margins of Sherburne County ryefield; averaged 8 per square yard. M. femurrubrum egg hatch well underway in Sherburne and Anoka Counties and in lighter soil areas of Otter Tail County. Counts in hatching beds in Sherburne County June 28 averaged 40 first-stage nymphs per square yard. (Minn. Ins. Rpt.). INDIANA - Early instars ranged 4-7 per 5 sweeps in alfalfa borders and roadsides in southern areas; nymphs 3-8 per sweep throughout 10-acre field of alfalfa and grass mixture in Huntingburg area, Dubois County. (Huber).

GYPSY MOTH (Porthetria dispar)- NEW YORK - Still reported in certain areas of Huntington, East Setauket, and Shirley in Suffolk County. (N.Y. Wkly. Rpt., June 24). RHODE ISLAND - Small but severe infestation with nearly complete defoliation in Providence County. (Reli).

JAPANESE BEETLE (Popillia japonica) - SOUTH CAROLINA - First of season seen June 4 at Easley, Pickens County; population increased next 10 days. (Fleming). VIRGINIA - Very numerous on various ornamentals at Farmville, Prince Edward County. (Peery). Moderate on wax myrtle at city of Franklin. (Allen). Heavy on blackberries along ditch row in Sussex County. (Smith). MARYLAND - Adults emerged from 15-acre wheatfield near Easton, Talbot County. Adult emergence holes averaged 10 per square yard. (U. Md., Ent. Dept.). RHODE ISLAND - First adults at Barrington, Bristol County. (King).

MEXICAN FRUIT FLY (Anastrepha ludens) - CALIFORNIA - First marked fly of season for San Diego County. Total of 3,150 McPhail traps in trapping zones. Three marked flies taken in trapping zone in 1968. No native flies collected in May. (PPC West. Reg.). MEXICO - Total of 2,079 inspections made on 560 traps at Tijuana, Ensenada, and Tecate, Baja California. Three unmarked flies (2 females, 1 male) and 390 sterile marked flies (213 females, 177 males) trapped at Tijuana; none taken in Ensenada and Tecate. (PPC Mex. Reg., May Rpt.).

PINK BOLLWORM (Pectinophora gossypiella) - TEXAS - Collected 2 moths in light traps and 4 in sex lure traps in McLennan and Falls Counties; total to date 40

in light traps and 30 in sex lure traps. (Cowan et al.). NEW MEXICO - Took 66 moths from 10 sex lure traps in southern Dona Ana County in 5-day period. (Adams). Took 2 moths from 10 sex lure traps at Leasburg, Dona Ana County, in 3-day period. (Elson). CALIFORNIA - Released 120,400 sterile moths in 4 drop zones during May. Number of adults collected in traps through May by area: Imperial Valley 316, Bard Valley 15, and Palo Verde Valley 207. (PPC West. Reg.). MEXICO - Aggregate of 5,120 inspections made of 807 sex lure traps in Sonora, Sinaloa, and Baja California. Trapped 3,903 moths at Mexicali and 1,691 at San Luis R.C.; negative in other areas. (PPC Mex. Reg., May Rpt.).

WHITE-FRINGED BEETLES (*Graphognathus* spp.) - ALABAMA - Older larvae heavy, destroyed 70 percent of soybean plants in 20-acre field in Dottelle Community, Monroe County. Soil treatment applied and field replanted. (Lemons). VIRGINIA - First 3 adults of season found at city of Norfolk. (Bowden).

HAWAII INSECT REPORT

Turf, Pasture - All stages of a GRASS WEBWORM (*Herpetogramma licarsisalis*) causing heavy initial defoliation, 75-100 percent, on lawns and pastures in Kula, Maui; 80 percent of eggs parasitized by *Trichogramma semifumatum* (a minute egg parasite). Heavy on lawns in Kona, Hawaii Island, at 1,500 feet elevation. (Miyahira, Iwane).

General Vegetables - All stages of GREENHOUSE WHITEFLY (*Trialeurodes vaporariorum*) medium to heavy on beans, eggplant, and tomatoes in Kona, Hawaii Island, at 1,000-1,500 feet elevation. (Iwane). LEAF MINER FLIES (*Liriomyza* spp.) heavy in tomato field in Wailua, Kauai. (Ikehara).

Fruits and Nuts - BARNACLE SCALE (*Ceroplastes cirripediformis*) nymphs and adults light in 140 acres of 150-acre passion fruit farm in Kahului, Maui; 80 percent of nymphs parasitized, primarily by *Tetrastichus* sp. (a eulophid wasp). (Miyahira). PALM MEALYBUG (*Palmicoccus palmarum*) nymphs and adults medium to heavy under bracts of young coconut fruits collected in scattered areas in Honolulu, Oahu. (Funasaki).

Beneficial Insects - A TACHINA FLY (*Trichopoda pennipes*) parasitized about 75 percent of *Nezara viridula* (southern green stink bug) adults on lima beans and vanda orchids in Lahaina, Kahului, Wailuku, and Pukalani, Maui. (Miyahira). Some CANE LEAFHOPPER EGG SUCKER (*Tyrtus mundulus*) nymphs and adults present amid light infestation of *Perkinsiella saccharicida* (sugarcane leafhopper) in abandoned sugarcane field in Halawa, Oahu. (Drake).

Miscellaneous Pest - Two VAGRANT GRASSHOPPER (*Schistocerca vaga*) adults in clearing at Lualualei, Oahu. (Yanamura).

INSECT DETECTION

RICE PENTATOMID BUG (*Scotinophara lurida* (Burm.)) - CALIFORNIA - Collected from crate containing lifeboats and radio equipment at McClellan Air Force Base, Sacramento County, May 29, 1968, by J.C. Shearer. Det. by G.T. Okumura. Confirmed by R.C. Froeschner. Possible introduction of this serious pest occurred when wooden crate from Vietnam was opened. Live insects were observed; the crate was closed and treated. As precautionary measure, intensive cooperative survey, including light trapping, was conducted and area for 0.25 mile around crate was sprayed or charred with flame thrower by State and Federal personnel. Seven dead specimens recovered from crate after treatment. (Cal. Coop. Rpt.). *S. lurida* is a major pest of rice in areas of Japan, China, and Ceylon. The bug's feeding causes localized, chlorotic leaf lesions on rice. Lesions gradually dry up and frequently result in death of that portion of the leaf between the lesion and the leaf tip, death of the central shoot, or death of the entire plant. In Japan, early planted rice varieties are most heavily infested and densely planted fields are preferred. *S. lurida* is recorded on rice and related grasses and is known to occur in Ceylon, southern China, Formosa, Indochina, Japan, Loochoo Islands, Malaya, Okinawa, and Thailand. Adults or late nymphs aestivate between rice crops in cracks in the bunds in rice fields or on adjacent higher ground. Adults leave aestivation sites in April and May or November and December, depending on planting, and settle on the crop when it is 2 or 3 weeks old. Activity occurs largely at dusk or at night. For additional details see CEIR 11(20):413-414, May 19, 1961. (PPC).

New State Record

A CONIFER SAWFLY (*Neodiprion pratti pratti*) - WEST VIRGINIA - Three-year infestation on Virginia pine at Camp Creek, Boone County. Det. by C.L. Morris. (p. 617).

New County Records

ALFALFA WEEVIL (*Hypera postica*) - NEW HAMPSHIRE - Coos County. WISCONSIN - Jefferson and Waukesha Counties. KANSAS - Clark, Comanche, and Barber Counties. (p. 608).

BROWN RECLUSE SPIDER (*Loxosceles reclusa*) - INDIANA - Vanderburgh and Dubois Counties. (p. 621).

CEREAL LEAF BEETLE (*Oulema melanopus*) - PENNSYLVANIA - Forest, Clarion, Armstrong, Fayette, and Allegheny Counties. (p. 622).

Weather continued from page 604.

WEATHER BUREAU'S 30-DAY OUTLOOK

JULY 1968

The Weather Bureau's 30-day outlook is for temperatures to average below seasonal normals in the North and South Atlantic Coast States, the west gulf coast region, and the Northwest. Above normal temperatures are indicated for the Southwest, the central and southern Plains, and the east gulf coast region. Elsewhere near normal temperatures are in prospect. Rainfall is expected to exceed normal along the southeast coast, and also in New England, the Great Lakes region, the southern Plateau region, and the north Pacific coast. Subnormal rainfall is expected over the east gulf coast region, the central Plains, the Great Basin, the northern Rockies, and in California. In unspecified areas near normal rainfall is anticipated.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$5.00 a year.

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

ARMY CUTWORM flights heavy but decreasing in eastern Wyoming. CORN LEAF APHID heavy on grain sorghum in Ray County, Missouri, and causing concern in eastern Kansas. POTATO LEAFHOPPER on alfalfa potentially economic in Indiana, may warrant controls in Ohio. (pp. 629-630).

EUROPEAN CORN BORER heavy in east-central Missouri; damaging in most States reporting. CORN ROOTWORM development rapid in Illinois; infestations reported in other States. FALSE CHINCH BUG heavy and widespread in grain sorghum in 4 counties in Rio Grande Valley of Texas. (pp. 630-632). SOUTHERN CHINCH BUG increasing on St. Augustine grass in Jasper, Comal, and Medina Counties, Texas. (p. 633).

ALFALFA WEEVIL larvae and PEA APHID nymphs and adults numerous in areas of Wyoming. (pp. 634-635).

BOLL WEEVIL generally increasing on cotton at Florence, South Carolina; square infestation continues high throughout central and southern Alabama. (p. 637). BEET ARMYWORM damage heavy on cotton in Lea County, New Mexico. (p. 638).

PALE-STRIPED FLEA BEETLE damaging sugarbeets and beans in Boulder and Weld Counties, Colorado. (pp. 639-640). May have SQUASH BEETLE outbreak in commercial watermelon area of South Carolina. (p. 641).

FIR ENGRAVER killing white fir in 2 national forests in California. (p. 645). PALMERWORM defoliating oak in eastern Ohio. (p. 646).

NORTHERN CATTLE GRUB adults severe in Clearwater County, Idaho. HORN FLY very numerous on cattle in central, north-central, and northwest Oklahoma. (p. 648). STABLE FLY severe in Calumet County, Wisconsin. (p. 649).

Heavy GRASSHOPPER infestations in eastern South Dakota. First JAPANESE BEETLE adults reported in some areas. PINK BOLLWORM general and heavy in desert districts of California. (p. 651).

Detection

New State records include a LACE BUG in Virginia, West Virginia, and Maryland (p. 658). GIANT BARK APHID in Arizona (p. 646); and an ICHNEUMON WASP in Arkansas (p. 650).

For new county records see page 647.

Special Reports

State Survey Coordinators. (pp. 655-657).

New State Records for a Lace bug (Dictyla echii). (p. 658).

Reports in this issue are for week ending July 5 unless otherwise indicated.

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SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMY CUTWORM (Chorizagrotis auxiliaris) - WYOMING - Flights still heavy but decreasing in eastern area; entering many houses and buildings. (Burkhardt, June 28).

ARMYWORM (Pseudaletia unipuncta) - CONNECTICUT - Light to moderate on forage at North Stonington, Preston City, Hampton, and Lebanon. (Savos, June 25). MICHIGAN - Adults still collected at all blacklight stations throughout State but in greatly reduced numbers. (Janes, July 1).

ASTER LEAFHOPPER (Macrostelus fascifrons) - WISCONSIN - Averaged 5 per 10 sweeps on carrots in southern Jefferson County. Moderate in alfalfa and grain in Kenosha County; no apparent damage noted on lettuce in area. (Wis. Ins. Sur.). MICHIGAN - Relatively high on vegetables. (Bath, July 1).

BET LEAFHOPPER (Circulifer tenellus) - ARIZONA - Averaged 10 per plant in 30-acre sugarbeet field in Kansas Settlement area, Cochise County. (Ariz. Coop. Sur.). WYOMING - One leafhopper found in sugarbeet field in Hot Springs County. Total of 11 fields checked in Big Horn Basin; 2 leafhoppers found on kochia in Washakie County. (Parshall).

CORN EARWORM (Heliothis zea) - NEW YORK - No activity in tassels in Hudson Valley; no moths from pupae overwintered at laboratory or taken in traps through June. (N.Y. Wkly. Rpt., July 1). SOUTH CAROLINA - Infested several cornfields in Anderson County. Fields knee high with bud funnels sprayed. Corn now tasseling too far advanced. Infested 3 out of 10 older cornstalks. (Nettles et al., July 3). GEORGIA - Light on peanuts in southern area. (French, June 28). ILLINOIS - Larvae in sweet corn in west-southwest area; damage up to 90 percent in unsprayed fields. (Ill. Ins. Rpt.). KANSAS - Occasional small larvae feeding in whorls of corn and sorghum in northeast and east-central areas. (Simpson). OKLAHOMA - Infested 60 percent of sweet corn plants in Marshall County; medium to heavy in sweet corn in Washita County. (Okla. Coop. Sur.). TEXAS - Light; very little damage on grain sorghum in Hill, McLennan, and Brazos Counties. (Teetes, Thomas, June 28).

CORN LEAF APHID (Rhopalosiphum maidis) - INDIANA - Few alates and apterae on corn and Johnson grass in southeast district. (Matthew). ILLINOIS - Found in 20 percent of whorls in sorghum planting at Urbana. (Ill. Ins. Rpt.). WISCONSIN - First migrants of season on tassels of commercial sweet corn in East Troy area, Walworth County. (Wis. Ins. Sur.). MISSOURI - Heavy in Ray County; 90+ percent of plants with colonies in whorls of grain sorghum. Leaf discoloration common throughout field. (Hanning). NEBRASKA - Infestations ranged 8-35 percent in sorghum fields in Otoe County; predators increasing. (Keith et al.). KANSAS - Moderate to heavy, up to 2,000+ per plant, in Chase, Lyon, Coffey, and Osage Counties; causing concern in area. (Simpson). ARIZONA - Averaged 20-30 per corn plant in 60-acre field in Cochise County; 5-12 per plant in young sorghum at Yuma, Yuma County; 100 per plant in 120-acre milo field in Kansas Settlement area, Cochise County. (Ariz. Coop. Rpt.).

GREENBUG (Schizaphis graminum) - NEBRASKA - Ranged 0-8 (averaged 3.5) per plant in 2 Otoe County sorghum fields. (Keith et al.).

PAINTED LADY (Vanessa cardui) - UTAH - Larvae less numerous on thistle than anticipated in view of very heavy spring migration through State. (Knowlton). WASHINGTON - Few second-generation adults appeared throughout Yakima Valley. (Johnson, June 28).

POTATO LEAFHOPPER (Empoasca fabae) - DELAWARE - Increase continues on lima beans in most areas. (Burbutis). OHIO - More common on alfalfa in State. Current populations in southern and central counties may warrant immediate controls to prevent "hopperburn" of second growth. Ranged 1-4 per sweep in alfalfa in Pickaway, Ross, and Licking Counties. (Rose). Less than 1 per sweep in Medina and Wayne Counties; up to 1-2 per sweep in few fields. (Thoburn, Glass). INDIANA - Heaviest, 2-23 (average 4) per sweep, on alfalfa in northwest district. Ranged from 3 per 10 sweeps to 11 per sweep (average 2 per sweep) in north-central and northeast

districts. Weather favored second-growth alfalfa throughout State. Potentially economic although very little yellowing to date. (Huber). WISCONSIN - Nymphs appearing on potatoes; none found on alfalfa. Adults common on both hosts. Ranged 1-3 per sweep on alfalfa in southeast area. Adults and nymphs averaged 7+ per plant in commercial potato field near East Troy, Walworth County; no damage. Counts moderate on some potatoes in Waushara County. (Wis. Ins. Sur.). MISSOURI - Ranged 20-90 per 100 sweeps on alfalfa. Alfalfa throughout State with "hopperburn". (Munson, June 29). WYOMING - Adults, probably this species, averaged 3 per 100 sweeps in untreated potato field in Goshen County. (Parshall, June 28).

POTATO PSYLLID (*Paratrioza cockerelli*) - WYOMING - Adults per 100 sweeps averaged 16 on matrimony vine and less than 1 in untreated potato field in Goshen County. No eggs or nymphs. No adults in treated fields in Goshen or Laramie Counties. (Parshall, June 28). COLORADO - Adults ranged 0-10 per 100 sweeps in Weld County. (Johnson).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - KANSAS - Surveys negative in Riley, Geary, Morris, Chase, Lyon, Coffey, Osage, and Wabaunsee Counties. (Simpson). UTAH - Undetected in Millard County alfalfa. (Knowlton).

TOMATO HORNWORM (*Manduca quinquemaculata*) - NEW MEXICO - Found in about 10 percent of tomato and chile plants at farm in Lasburg, Dona Ana County. (Garcia, June 28).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - VERMONT - Activity expected within next few days despite slow growth of corn in most localities. (MacCollom). NEW YORK - Most emergence in cages and catches in traps almost over in Hudson Valley. Occasional females in fields at Hurley. Infested 25 percent of plants in untreated North Star and Northern Belle corn June 26; mostly second instars in tassels with some first instars present. Some third instars in tassel stands; fourth instar noted July 1. Controls hampered or prevented by unfavorable weather during hatching period of June 7-25. Some hatch in Livingston County. Sweet corn sprayed in Rockland County showed much leaf damage and few small larvae in tassels or whorls. Earliest North Star corn about 2 percent in silk by June 21. Earliest sprayed and unsprayed sweet corn in Orange County with little leaf damage and only few small larvae in whorls. Heavy in earliest corn in Monroe County; hatch heavy. (N.Y. Wkly. Rpt.). DELAWARE - About half of larvae in early planted sweet corn pupated in Sussex County; no adults in black-light traps in western section but collections high in eastern section of county. (Barbutis, Kelsey, June 28). MARYLAND - Infestations ranged 10-50 percent in field corn stands on Eastern Shore. Third and fourth instars common in more advanced corn. Infestation in few cornfields ranged as high as 90-95 percent in Wicomico and Somerset Counties. (U. Md., Ent. Dept.). VIRGINIA - Larvae infested 50 percent of single field of field corn in Appomattox County. Six second and third instars from cornstalk in Campbell County. (Carson, Amos). TENNESSEE - Infested up to 90 percent of some fields in central areas. Some garden corn with 4-6 borers per stalk. Late-planted garden corn less damaged. (Jennings, Quillin). OHIO - First-generation larvae damaging corn over much of State. Larvae 1-5 per plant in field of 3 to 4-foot-tall corn in Licking County; 20 percent of plants damaged. (Rose). Infested 12 of 50 plants in Franklin County. (Lyon). Larvae feeding mainly in whorls in 25 of 100 plants in 40-acre field of 3-foot-tall corn in Auglaize County. (Sullivan, King). INDIANA - First generation generally light on corn in northern districts. Light leaf feeding on 4-28 percent of 24-inch-high corn checked; larval mortality averaged 90 percent. Larval infestations ranged 4-52 (averaged 17.4) percent and mortality averaged 60 percent in 24 to 42-inch (whorl height) corn. Mostly second and third instars with few fourth instars in early corn. Damage mainly on leaves and whorls; few stalk entries in early corn. (Huber). About 90 percent of corn less than 24 inches tall in southeast district. Second to fourth instars up to 12 per plant in

completely infested 12-acre field in Ripley County; corn height 65 inches extended leaf. (Matthew). MICHIGAN - Much lower on field corn than in 1967. (Janes, July 1). ILLINOIS - First larvae developing rapidly; many entered corn-stalks. Development slightly earlier than normal. Light in most advanced fields. Problems from second generation possible in late-maturing cornfields with high survival of first generation. (Ins. Sur. Bull.). Larvae averaged one per plant in 10 percent of plants in northwest and western sections. (Ill. Ins. Rpt.). WISCONSIN - Second instars boring into tassels of sweet corn and third instars common in midribs of field corn in southeast counties. (Wis. Ins. Sur.). MISSOURI - Light in west-central area; infested 0-63 percent of plants. (Munson, June 29). Heavy in east-central area. Second through fifth instars 2-8 per plant on 80 percent of 40 to 55-inch-high corn plants. (Craig, Thomas). KANSAS - Some leaf feeding in most fields in northeast area; infested 10-29 percent of plants in most fields along Kansas River Valley. (Gates, June 26). NEBRASKA - First-brood larvae damaged 12-18 (average 13) percent of plants in 3 fields in Otoe and Johnson Counties. Mostly third, few fourth instars. (Keith et al.). NORTH DAKOTA - Light egg laying begun in southeast area. One egg mass per 500 plants on 36-inch extended leaf corn near Barney, Richland County. No eggs in Ransom or Sargent Counties. (Kaatz).

STALK BORER (Papaipema nebris) - NEBRASKA - Heavy on giant ragweed (Ambrosia trifida) in Otoe, Johnson, Jefferson, and Nemaha Counties. Larvae ranged from second instar to full grown; mostly third and fourth instars. Damage to corn remains light in these areas. (Keith et al.). IOWA - Damage very serious in 300 acres of corn planted in chisel-plowed land; large areas dying. Up to 10 1-inch-long larvae per plant. (Iowa Ins. Inf., June 22). ILLINOIS - Still found in some cornfields. (Ins. Sur. Bull.).

SORGHUM WEBWORM (Celama sorghiella) - TEXAS - Scattered and light on grain sorghum in Hill, McLennan, and Brazos Counties. (Teetes, Thomas, June 28).

SOUTHERN CORNSTALK BORER (Diatraea crambidoides) - MARYLAND - Light in Wicomico and Dorchester Counties. Populations well below 1967 for same period. (U. Md., Ent. Dept.).

SUGARCANE BORER (Diatraea saccharalis) - TEXAS - Heavy; damaged grain sorghum throughout Rio Grande Valley. (Deer, June 28).

CORN ROOTWORMS (Diabrotica spp.) - ILLINOIS - Development progressing rapidly; early emerging adults observed. Pupae 2-3 percent of population. Development earlier in western areas than in eastern areas. (Ins. Sur. Bull.). D. longicornis larvae averaged up to 32 (high 75) per hill in western area; D. longicornis and D. virgifera larvae averaged 2 per hill in northwest section. (Ill. Ins. Rpt.). IOWA - Total of 11 Diabrotica spp. second instars taken from 115 plants in Guthrie, Madison, Union, Louisa, Delaware, and Mitchell Counties June 15-17; 5 first instars collected from 50 plants in Louisa and Delaware Counties. Up to 35 per plant in second-year cornfield in Taylor County; some nearly full grown. (Iowa Ins. Inf.). MISSOURI - Hatch of D. virgifera and D. longicornis continues over northern areas as of June 29. D. virgifera larvae in untreated fields currently 10-60 per plant in northwest area and 6-30 in north-central; pupae in both areas. D. virgifera adult collected in Knox County July 3. D. undecimpunctata howardi adults emerging in central and northern areas. (Munson). KANSAS - Few D. virgifera adults in Brown and Doniphan Counties. (Brooks, Gates). NEBRASKA - D. virgifera and D. longicornis larvae ranged 2-32 (average 12) per plant in cornfield near Auburn, Nemaha County; mostly third instars. First D. virgifera adults of season in same field. Peak damage past in east and south-eastern areas. (Keith et al.). SOUTH DAKOTA - Diabrotica spp. hatch late again this year but should progress rapidly during week of July 8. First through third instars in field at Centerville. (Jones). ARIZONA - D. undecimpunctata howardi adults averaged 20 per corn plant in Stewart District, Cochise County. (Ariz. Coop. Sur.).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - WISCONSIN - General increase in larval population noted despite cool, wet conditions. Larval size variable; most have entered roots. Numbers not of concern in most fields being checked in Rock and Walworth Counties. Counts ranged from 14 per plant in plot at Arlington, Columbia County, to 6.5 per plant in Grant County fields. Fields being sampled in Rock and Walworth Counties have history of treatment. (Wis. Ins. Sur.).

CORN FLEA BEETLES (*Chaetocnema* spp.) - ILLINOIS - Occasional damage by *C. pulicaria* continues in late-planted cornfields bordered by grassy areas. (Ins. Sur. Bull.). ARIZONA - *C. ectypa* feeding light on young sorghum foliage at Yuma, Yuma County. (McHenry).

SEED-CORN BEETLE (*Agonoderus lecontei*) - MICHIGAN - Second-generation adults numerous past 10 days in Lenawee County blacklight trap. (Janes, July 1).

BILLBUGS (*Sphenophorus* spp.) - ILLINOIS - Damaged some stands of late-planted corn (2-6 inches tall) in west-southwest, east-southeast, and southwest sections. (Ill. Ins. Rpt.).

CHINCH BUG (*Blissus leucopterus*) - KANSAS - Light, 5-10 per plant, in 10-25 percent of sorghum in border rows adjacent to small grain fields in Morris, Chase, and Lyon Counties; some treatments. (Simpson).

FALSE CHINCH BUG (*Nysius ericae*) - TEXAS - Heavy and widespread in grain sorghum in Frio, Zavala, Dimmit, and Maverick Counties; causing concern. (Deer, June 28).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Adults averaged 20 per corn plant in Stewart District, Cochise County. (Ariz. Coop. Sur.).

RICE STINK BUG (*Oebalus pugnax*) - TEXAS - Medium and widespread on grain sorghum near New Braunfels, Comal County. (Schumann, June 28).

SORGHUM MIDGE (*Contarinia sorghicola*) - TEXAS - Few scattered heavy populations damaging grain sorghum in central area. Activity heavy in some Bell County fields. Light and scattered on grain sorghum in Hill, McLennan, Falls, and Brazos Counties. (Cook, Thomas, June 28).

SPIDER MITES (*Oligonychus* spp.) - TEXAS - Medium and widespread on grain sorghum in Rio Grande Valley. Unusually heavy during rainy weather June 22-28. (Deer).

A SLUG (*Deroceras* sp.) - OHIO - Continues major corn pest in State. Problem expected to decrease on corn in State as crop develops and soil moisture decreases. Damaging field corn in Tuscarawas County field. (Kirven). Damage continues in northeastern and north-central areas. (Barry).

SMALL GRAINS

APPLE GRAIN APHID (*Rhopalosiphum fitchii*) - MAINE - Unusually abundant on oats at Presque Isle June 22-28; damage severe to small grains in many fields. Controls necessary in many fields. (Shands et al.).

A PSYCHID MOTH (*Apterona crenulella*) - CALIFORNIA - Medium on barley in 2-acre planting in Tulalake, Siskiyou County. (Cal. Coop. Rpt.).

SAY STINK BUG (*Pitidea sayi*) - UTAH - Light on wheat at Holden and at Delta and Deseret, Millard County. (Knowlton).

WHEAT STEM MAGGOT (*Meromyza americana*) - NORTH DAKOTA - Loss 2 percent (white heads) in Richland County wheatfield. (Brandvik).

TURF, PASTURES, RANGELAND

SAGEBRUSH DEFOLIATOR (*Aroga websteri*) - IDAHO - Buildup begun in several southern areas; light past 3-4 years. Larvae heavy and defoliating sagebrush near Kimama, Lincoln County, and between Challis and Salmon in Salmon River Canyon, Lemhi County. (Barr).

SOD WEBWORMS (*Crambus* spp.) - MICHIGAN - Adults appearing in blacklight traps at all blacklight stations. Egg laying started in many southern counties. (Janes, July 1).

A PSYCHID MOTH (*Apterona crenulella*) - UTAH - Moderate on range foliage in lower Oak Creek Canyon and at Leamington, Millard County, and at Mona, Juab County. (Knowlton).

CHINCH BUGS (*Blissus* spp.) - TEXAS - *B. insularis* increasing on St. Augustine grass in Jasper, Comal, and Medina Counties June 22-28. (Schumann et al.).
NEBRASKA - *B. leucopterus* migrating from ripening grain to corn and sorghum in southeast area. Nymphs ranged 0-55 (average 15) per plant in rows adjacent to wheatfield in Jefferson County sorghum field. (Keith).
CONNECTICUT - *B. leucopterus* feeding on lawns. (Savos, July 3).

FORAGE LEGUMES

ALFALFA WEEVIL (*Hypera postica*) - NEW HAMPSHIRE - Collected June 26 at Conway, Carroll County, for new county record. Activity in southern area past peak; pupation rapid. (Sutherland). Parasite survey at 1966 and 1967 release sites May 28 recovered *Microctonus aethiops* (an ichneumon wasp) at Durham; *Tetrastichus incertus* (a eulophid wasp) at Durham, Concord, and Enfield; *Bathyplectes curculionis* (an ichneumon wasp) at Durham and Concord. (Stewart, Sutherland).

VERMONT - Pupation prevalent in all areas as of June 21. Larvae declining rapidly; no new eggs. Some larvae still found July 5; pupae common. *Bathyplectes curculionis* (an ichneumon wasp) recovered from Townshend. (MacCollom).

CONNECTICUT - Adults 22 and larvae 1,500+ per 100 sweeps at Storrs June 24; pupal cases numerous. (Savos).
NEW YORK - Pupae more common; some small larvae noted. Occasional light brown adult found in Livingston County. (N.Y. Wkly. Rpt., July 1).
OHIO - Most larval damage over. Some large populations remain on second-growth fields where controls ineffective or not applied; 30 percent of second-growth foliage consumed in Licking County field. Larvae 16 per sweep. (Rose). Controls in progress in second-growth alfalfa in Wayne and Medina Counties; damage and larval numbers vary relative to effectiveness of controls. Larvae mostly light with little damage; 10+ larvae per sweep damaging in some fields. Many larvae pupated. Numerous young larvae in field in Wayne County indicates feeding damage may continue for 2 more weeks in area. (Glass, Thoburn).
MICHIGAN - Newly emerged adults common on 6 to 8-inch regrowth alfalfa in Kalamazoo, Van Buren, and Allegan Counties. (Thompson, July 1). Averaged 7 per sweep in about 8 square feet. Feeding damage 25-30 percent in most fields surveyed. Adult emergence not complete. Few first, second, and third instars collected. (Newman, July 1).
INDIANA - Larvae ranged from 1 per 5 sweeps to 5 per sweep on second-growth alfalfa in northwest district, 1-5 per sweep in north-central district, and 2-9 per sweep in northeast district. Adults throughout northern districts generally scarce; 1-2 per 5 sweeps in 80 percent of fields and ranged from 2 per 5 sweeps to 9 per sweep (average 2 per sweep) in 20 percent of fields. Noneconomic on second-growth alfalfa in northern districts; problem appears over for 1968. (Huber). Larvae ranged 3-8 per 25 sweeps in southeast district. (Matthew).

WISCONSIN - Few adults appearing in alfalfa but larvae still dominant. Few adults taken in Kenosha County field, but most larvae in first to fifth instar. Larvae averaged 3 per 100 sweeps; more common in regrowth alfalfa than in first growth. Specimen collected in Rock County field 2 miles south of Janesville. Larval survey completed in southern 2 tiers of counties. Additional surveys may be made

on second-growth alfalfa, depending on activity. (Wis. Ins. Sur.). MISSOURI - Adults collected in Macon and Scotland Counties for new county records. (Munson). SOUTH DAKOTA - Very light in Stanley County for a new county record. Larval counts per 100 sweeps averaged 3 in western area and 8 in eastern area of Jackson County. Larvae 3 per 100 sweeps 7 miles north of Four Corners near Hayes, Stanley County. (Wirtz). Near Spearfish, Lawrence County, estimated high larval count of 5,000 per 100 sweeps revised to 6,000+ per 100 sweeps in alfalfa week ending June 28. (Walstrom). COLORADO - Increasing since alfalfa cut. Larvae ranged 0-70 and adults 0-50 per 100 sweeps in Boulder, Weld, Larimer, and Morgan Counties. (Johnson). NEW MEXICO - Larvae averaged 4-8 per 25 sweeps in alfalfa at Corrales, Sandoval County. (Heninger). WYOMING - Counts per 100 sweeps in 2 alfalfa fields in Washakie County June 19: 20 adults and 4,200 larvae; 100 adults and 24,600 larvae. No adults and 1,400 larvae in one field in Big Horn County. (Burkhardt). Averaged per 100 sweeps by county June 28: Laramie - 30 larvae and no adults; Goshen - 650 larvae and no adults; Platte - 1,470 larvae and 17 adults. About 70 percent of first-cutting alfalfa harvested in these counties. Many fields in Platte County treated or harvested early. Larvae currently ranged 11-200 (average 66) per 100 sweeps on second-crop alfalfa (1-3 inches tall) in Hot Springs, Washakie, and Big Horn Counties. Pupation 90-100 percent in these areas. (Parshall). Larvae per 100 sweeps averaged 4,900 in uncut alfalfa fields in Big Horn County and 3,700 in 2 uncut fields in Park County. (Burkhardt). IDAHO - Larvae averaged 24 and adults 1.0-1.5 per sweep June 13 on alfalfa on experiment station at Aberdeen, Bingham County. (Carpenter). UTAH - Some damage to second-crop alfalfa in Millard County. Generally adults light; adults averaged 1.5 and larvae 17 per 10 sweeps near Holden. Decreasing at Delta, Deseret, and Hinckley in Millard County. Ranged 50-85 per 10 sweeps; damaged several fields on second-crop alfalfa at Magna, Salt Lake County. (Knowlton). NEVADA - Mostly adults; larvae up to 20 per sweep on uncut alfalfa at Preston and Lund, White Pine County; heavy damage indicates heavy larval infestations earlier. (Heringer). WASHINGTON - Larvae 2-10 per sweep in 7 Clark County alfalfa fields; larva in cocoon at Adna, Lewis County. (Pennell, June 28). OREGON - Mostly last instars averaged 1.4 per sweep in 3 ten-sweep samples in field at Warren, Columbia County. Plants 10-12 inches high. Damage about 10 percent. Weather cool, cloudy, and windy. (Brown). This is new county record. Surveys negative in Lane and Douglas Counties. Expected in Junction City and Eugene area. (Westcott).

CLOVER HEAD WEEVIL (Hypera meles) - MISSOURI - Collected in Bollinger, Douglas, Laclede, Morgan, Ozark, Reynolds, Wayne, Cooper, and Wright Counties by L. R. Hanning. These are new county records. (Munson).

LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) - NEBRASKA - Averaged 10 per 50 sweeps in Johnson County red clover field. (Keith et al.).

CLOVER SEED WEEVIL (Miccotrogus picrostris) - MISSOURI - Collected in Grundy, Knox, Mercer, and Shelby Counties by R.E. Munson and in Buchanan, Carroll, Lafayette, Platte, and Ray Counties by L.R. Hanning. All are new county records. (Munson). IDAHO - Adults averaged 12 per sweep in white Dutch clover seed fields throughout Boundary County June 18. Clover heads not yet turned down or brown. (Studer).

A JAPANESE WEEVIL (Calomycterus setarius) - MISSOURI - Ranged 1-6 per 10 sweeps in alfalfa field in Clay County. This is new county record. (Hanning).

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata undecimpunctata) - OREGON - Adults averaged up to 2 per sweep in mature alfalfa in Garden Valley, Douglas County; averaged 5 per sweep in small patch of adventitious alfalfa at River Forks Park. (Westcott).

FLEA BEETLES (Systema spp.) - ARIZONA - Systema sp. ranged 20-30 per 100 sweeps in some alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.). COLORADO - S. blanda adults in alfalfa ranged 20-120 per 100 sweeps in Longmont area, Boulder County. (Johnson).

PEA APHID (*Acyrtosiphon pisum*) - DELAWARE - Averaged 50-100 per 10 sweeps on alfalfa in Kent and Sussex Counties. (Burbutis). INDIANA - Increased to moderate levels, 23-58 per sweep, on second-growth alfalfa in northwest district where cool, wet weather occurred past 2 weeks; 6-18 per sweep in other northern areas. (Huber). WISCONSIN - Decreased in southeast area alfalfa; highest count 3 per 10 sweeps. (Wis. Ins. Sur.). COLORADO - Light, 50-500 per 100 sweeps, in most alfalfa in Boulder, Weld, Larimer, and Morgan Counties; 25,000 per 100 sweeps in field in Greeley area, Weld County. (Johnson). WYOMING - Counts per 100 sweeps averaged 6,300 in 2 Washakie County fields and 2,800 in 1 Big Horn County field June 19. (Burkhardt). Adults and nymphs 40-2,000 per 100 sweeps June 22-28 in Laramie, Platte, and Goshen Counties; heaviest, 1,150 per 100 sweeps, in Goshen County. Adults and nymphs currently ranged 20-500 (average 220) per 100 sweeps in alfalfa in Hot Springs, Washakie, and Big Horn Counties. (Parshall). UTAH - Higher, but still moderate on second-crop alfalfa in Millard County. Predators generally numerous. Ranged 300-500+ per 10 sweeps at Erda and Lakepoint, Tooele County. (Knowlton). NEVADA - Increasing to 100-150 per sweep on alfalfa at Fallon, Churchill County, and at Lovelock, Pershing County. Lady beetles prevalent but parasites very light at Fallon. (Arnett, Heringer). IDAHO - Up to 100+ per sweep on alfalfa at experiment station at Aberdeen, Bingham County; many damsel bugs and lady beetles present. (Carpenter, June 13). Ranged 10-200 per sweep on Canyon County commercial alfalfa seed fields, depending on past treatments. (Waters, June 28). WASHINGTON - Averaged 100 per sweep on alfalfa under severe drought; moderate to heavy at Lowden, Walla Walla County. (Featherston, June 28).

MEADOW SPITTLEBUG (*Philaenus spumarius*) - MISSOURI - Collected in Bollinger and Macon Counties (Hanning) and in Linn, Randolph, and Sullivan Counties. All are new county records. (Munson). WISCONSIN - Adults predominate in alfalfa throughout much of southern counties; nymphs higher than normal in northern area. (Wis. Ins. Sur.).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Ranged 20-110 per 100 sweeps in alfalfa in Yuma, Yuma County. (Ariz. Coop. Sur.).

LYGUS BUGS (*Lygus* spp.) - NEBRASKA - Averaged 10 per 20 sweeps on Johnson County alfalfa field. (Keith et al.). KANSAS - Moderate, 20-35 per 10 sweeps, in many alfalfa fields in Geary, Morris, Chase, Lyon, Osage, and Wabaunsee Counties. (Simpson). WYOMING - Averaged 300 per 100 sweeps in Washakie and Big Horn Counties June 19. (Burkhardt). Nymphs and adults per 100 sweeps ranged 7-500 (average 96) in Laramie, Goshen, and Platte Counties June 22-28; currently averaged 25 in alfalfa in Washakie, Hot Springs, and Big Horn Counties. (Parshall). NEW MEXICO - Counts per 25 sweeps in alfalfa averaged 2-6 at Corrales, Sandoval County (Heninger), and 15 in Anthony area, Dona Ana County (Elson, Dickerson). ARIZONA - Counts per 100 sweeps averaged 250 in alfalfa in Maricopa County and ranged 220-1,200 at Yuma, Yuma County. (Ariz. Coop. Sur.). UTAH - Adults heavy on alfalfa left for first-crop seed; large acreages cut for foliage. Adults 8-30 per 10 sweeps in fields past 10 days. More than 300 *Lygus*, largely *elisus*, taken in light trap at Delta, Millard County, in one hour June 18. Ranged 11-46 per 10 sweeps in alfalfa at Deseret. *L. elisus*, *L. hesperus*, and *Lygus* spp. per 10 sweeps ranged 5-38 in blossoming alfalfa at Deseret and 8-26 at Oasis, Millard County. Big movement occurred as first-crop alfalfa cut. Ranged 23-65 per 10 sweeps on first-crop alfalfa at Magna; 70 percent nymphs. Nearly as numerous on second-crop alfalfa in Salt Lake County; mostly adults. (Knowlton). IDAHO - Occasionally exceeding 4 per sweep in Canyon County; alfalfa seed fields in full bloom. (Waters, June 28).

TARNISHED PLANT BUG (*Lygus lineolaris*) - MISSOURI - Ranged 5-47 per 10 sweeps on west-central area alfalfa and red clover June 23-29. Currently ranged 5-48 per 10 sweeps in alfalfa and red clover in north-central and northwest areas. (Munson).

ALFALFA PLANT BUG (*Adelphocoris lineolatus*) - NEBRASKA - Adults averaged 10 and nymphs 13 per 20 sweeps on Johnson County alfalfa field. (Keith et al.). KANSAS - Averaged 2-8 per 10 sweeps on alfalfa in Geary, Morris, Chase, Lyon, Osage, and Wabaussee Counties. (Simpson). MISSOURI - Nymphs moderate to heavy, 32-67 per 10 sweeps, in alfalfa in north-central area. (Munson).

SUPERB PLANT BUG (*Adelphocoris superbus*) - UTAH - Moderate, 1-3 per 10 sweeps, in alfalfa field at Erda, Tooele County. (Knowlton).

GARDEN FLEAHOPPER (*Halticus bracteatus*) - MISSOURI - Found in most alfalfa fields in west-central area; averaged 61 per 10 sweeps in one field. (Munson, June 29).

ALFALFA CATERPILLAR (*Colias eurytheme*) - MICHIGAN - Adults appearing in alfalfa; numbers and activity will markedly increase next 10-14 days. (Janes, July 1). MISSOURI - Larvae ranged 3-12 per 10 sweeps in west-central area alfalfa June 23-29. Larvae per 10 sweeps in alfalfa currently ranged 8-16 in north-central area and 20-35 in northwest area. (Munson). WYOMING - Increasing in Laramie, Goshen, and Platte Counties; larvae 0-26 (average 11) per 100 sweeps June 22-28. Larvae currently averaged 2 per 100 sweeps in alfalfa in Big Horn Basin area. (Parshall). COLORADO - Larvae averaged 10-20 per 100 sweeps in alfalfa in Boulder, Weld, Larimer, and Morgan Counties. (Johnson). NEW MEXICO - Averaged 20-40 per 25 sweeps in alfalfa at Roswell, Chaves County. (Mathews). UTAH - Averaged 1 per 10 sweeps on alfalfa at Desert and "Boggs" area, Millard County. (Knowlton).

WEBWORMS (*Loxostege* spp.) - KANSAS - *L. similalis* averaged 5-10 per 10 sweeps on alfalfa in Chase and Lyon Counties. *L. commixtalis* 2-10 per 10 sweeps on alfalfa in Morris, Chase, and Lyon Counties; no damage. (Simpson).

CUTWORMS - NORTH DAKOTA - Late instars up to 8 (average 4) per square foot under windrowed alfalfa near Hunter, Cass County; larvae also in baled alfalfa. (Brandvik, Frye). MICHIGAN - *Amathes c-nigrum* most numerous of cutworms in State in 1968. (Janes, July 1).

GREEN CLOVERWORM (*Plathypena scabra*) - MICHIGAN - First adult of season June 20 at Lenawee County Blacklight station. Subsequent collections June 22 and 26. Gradual buildup of flying adults expected during next 2-3 weeks. (Newman).

A PSYCHID MOTH (*Apterona crenulella*) - CALIFORNIA - Medium in 2-acre alfalfa planting in Tulelake, Siskiyou County. (Cal. Coop. Rpt.).

CLOVER MITE (*Bryobia praetiosa*) - ARIZONA - Heavy in seed alfalfa fields in Stanfield area, Pinal County, June 19. (Schonhorst).

SOYBEANS

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - MARYLAND - Damage continues heavy on soybeans in Worcester County areas along Chincoteague Bay; overwintering populations heavy in past years. (U. Md., Ent. Dept.).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Averaged 2 per plant in 20-acre field in Kansas Settlement area, Cochise County. (Ariz. Coop. Sur.).

DINGY CUTWORM (*Feltia subgothica*) - IOWA - Infested 50 acres in Monona County. (Iowa Ins. Inf., June 22).

THRIPS - ILLINOIS - Increasing on soybeans in some areas. (Ins. Sur. Bull.).

STRAWBERRY SPIDER MITE (*Tetranychus atlanticus*) - ARIZONA - Heavy in treated field at Yuma, Yuma County. (Ariz. Coop. Sur.).

PEANUTS

RED-NECKED PEANUTWORM (Stegasta bosqueella) - OKLAHOMA - Heavy in older peanuts in Marshall County. (Okla. Coop. Sur.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - GEORGIA - Moderate in Tift County. (French, June 28).

GRANULATE CUTWORM (Feltia subterranea) - GEORGIA - Light to moderate in southern area. (French, June 28).

THRIPS (Frankliniella spp.) - OKLAHOMA - Medium on peanuts in Bryan County. (Okla. Coop. Sur.).

COTTON

BOLL WEEVIL (Anthonomus grandis) - SOUTH CAROLINA - Generally increasing slowly; infested up to 40 percent of some untreated fields at Florence. Adults 0.1-0.2 per 100 squares in untreated plots; none in treated plots. Adults 3 on 9 groups of 10 potted plants; total to date 21. Collected 63 adults in 6 male attractant traps; total to date 2,802. Percent larval infestations ranged 1.8-5.4 in treated plots and 1.7-5.8 in untreated plots. (Taft et al., June 28). GEORGIA - As of June 28, percent punctured squares 1-3 in 4 Sumter County fields (French); 4 and 9 in 2 Worth County fields; 0 and 2 in 2 Tift County fields (Womack); 1 in Putnam County (Beckham). ALABAMA - Square infestation continues high throughout central and southern areas; controls general. Second generation expected this week and next in extreme southern areas. No "hatchout" yet in lightly infested area in northern area; expected July 8-25. "Hatchout" will vary widely due to wide variation in age of cotton. Overwintered weevils increased in cotton in northern area; numbers much lighter than in 1967. (McQueen). TENNESSEE - Percent punctured squares in regularly infested area ranged 3-40 in older cotton. Counts low in most fields where overwintered weevil control used. Weather unfavorable for weevil increase. (Locke). MISSISSIPPI - Punctured squares found in 5 of 45 fields checked in delta counties. Averaged 2.4 percent for these 5 fields (maximum 5.5). (Pfrimmer et al.). ARKANSAS - Infested 132 of 5,933 fields as of June 28. This infestation 2.2 percent compared with 0.55 percent 2 periods ago. Currently continues very light. (Boyer, Barnes). OKLAHOMA - Ranged 0-1 per 200 row feet in early cotton throughout southwest counties. (Okla. Coop. Sur.). TEXAS - First new-generation weevils found in 2 early planted fields in McLennan and Falls Counties; no weevils taken in male attractant traps. Percent punctured squares ranged 0-13.7 (average 3) in 34 treated fields and 0.4-12.0 (average 4.2) in 17 untreated fields. (Cowan et al.). For Boll Weevil in High Plains see page 650.

Report on Trapping of Overwintered Boll Weevils

MISSISSIPPI - Numbers of overwintered boll weevils captured May 18 to June 21 in traps (CEIR 18(20):430, 1968) baited with live male boll weevils were as follows: 1,250 on 73 wing traps in five 1-acre plots of cotton, 280 on 36 pyramid traps in 1-acre untilled clearing adjacent to wooded areas surrounding cotton in 1967, and 1,047 in 4 funnel traps along roadside 0.75 mile from nearest cotton. Cotton in 6 to 8-leaf stage. (Cross, Hardee).

TEXAS - From May 25 to June 21, total of 535 overwintered boll weevils captured on wing traps baited with live male boll weevils in fields in Kent, Dickens, and Crosby Counties that were in 1967 reproduction-diapause control program. During same period, 4,843 weevils were captured outside treated area. Weevils captured by county as follows: Crosby - zero on 24 traps in 1 field; Dickens - 6 on 28 traps in 4 of 4 fields; Kent - 529 on 318 traps in 5 of 5 fields; Stonewall - 4,837 on 30 traps in 1 field; Glasscock - 6 on 24 traps in 3 of 6 fields. Traps removed from all except 1 field in Crosby, 3 in Kent, 1 in Stonewall, and 6 in Glasscock Counties. Cotton, replanted several times in most of area, varies in size. (Hardee, Cross).

BOLLWORMS (*Heliothis* spp.) - SOUTH CAROLINA - Percent larval infestations ranged 0-0.6 in treated plots and 0-0.2 in untreated plots at Florence. Collected 37 *H. zea* in light trap; total to date 211. (Taft et al., June 28). GEORGIA - As of June 28, *H. zea* larvae 1-3 per 100 terminals in 4 Sumter County fields (French). eggs 3 and 6, small larvae 2 and 4 per 100 terminals in 2 Worth County fields, 3 eggs and 4 larvae per 100 terminals in Tift County (Womack), light in Putnam County (Beckham). ALABAMA - Increasing in southern and central areas; heavy in some fields. (McQueen). TENNESSEE - Counts ranged 1-10 per 100 terminals. Control in order in most cases. Larvae throughout cotton-growing area. (Locke). MISSISSIPPI - Damaged squares found in 38 of 45 fields checked in delta counties. Averaged 2.5 percent (maximum 7) in these fields. Eggs found on terminals in 6 fields; maximum 3.5 per 100 terminals. (Pfrimmer et al.). ARKANSAS - Only eggs in 529 of 5,933 fields, only larvae in 394 fields, and eggs and larvae in 150 fields; 13 percent of fields infested compared with 9.7 percent 2 periods ago. (Boyer, Barnes, June 28). Larvae currently declined from past week. Moths on sugar lines on cotton very light in late June. Only 3 moths observed on cotton and 20 on soybeans on 4 nights June 20-25. Moths low since June 11 with exception of 25 on cotton June 14, and 13 on soybeans June 20. (Dean). TEXAS - Remains light in McLennan and Falls Counties. Eggs 0-2.7 (average 1) and larvae 0-2.3 (average 0.7) per 100 terminals in 39 treated fields. Eggs 0.3-4.3 (average 1.1) and larvae 0-2.3 (average 0.4) per 100 terminals in 21 untreated fields. Percent damaged squares ranged 0-10.3 (average 1.5) in 34 treated fields and 0-3.3 (average 1) in 17 untreated fields. Total of 37 larvae determined *H. virescens* and 20 *H. zea* of 57 larvae collected previously on cotton. (Cowan et al.). NEW MEXICO - *H. zea* light at Roswell, Chaves County (Mathews), and in lower Mesilla Valley of Dona Ana County (Elson, Dickerson).

BEEET ARMYWORM (*Spodoptera exigua*) - NEW MEXICO - Causing heavy terminal and square damage in Lea County. (Durkin).

PALE-SIDED CUTWORM (*Agrotis malefida*) - TEXAS - Total of 12 moths taken in light trap in McLennan and Falls Counties. (Cowan et al.).

COTTON SQUARE BORER (*Strymon melinus*) - TEXAS - Light in 19 fields in McLennan and Falls Counties. (Cowan et al.).

TARNISHED PLANT BUG (*Lygus lineolaris*) - TENNESSEE - Reached control levels in many fields over cotton area. Some "pinhead" square damage in all fields surveyed. Further increase expected as vegetation around fields toughens. (Locke). ALABAMA - Adults and nymphs in most northern area cotton destroying some squares. (McQueen). MISSISSIPPI - Averaged 0.9 (maximum 2.5) per 100 terminals in 27 of 47 fields checked in delta counties. (Pfrimmer et al.).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Most generally moving from freshly cut alfalfa and mature safflower fields into cotton; heavier in adjacent cotton fields for about 5 days. Averaged 20 per 100 sweeps in Maricopa and Pinal Counties; adults 4 per plant in Cochise County. (Ariz. Coop. Sur.). NEW MEXICO - Light in cotton at Roswell, Chaves County (Mathews), and in southern Dona Ana County (Elson, Dickerson).

PLANT BUGS - ARKANSAS - None in 2,244 of 5,933 fields. Counts per 100 terminals ranged 1-19 in 3,605 fields, 20-39 in 83 fields, and 40+ in 1 field. Infested 3,689 (62 percent) of fields surveyed; treatment recommended for one field. (Ark. Ins. Sur., June 28).

FLAHOOPPERS - OKLAHOMA - *Psallus seriatus* ranged 30-70 per 200 row feet in early cotton in Tillman and Jackson Counties; light in Bryan County. (Okla. Coop. Sur.). TEXAS - *P. seriatus* increased, especially in fields not treated past 2 weeks in McLennan and Falls Counties. Counts per 100 terminals averaged 19.4 (maximum 46) in 39 treated fields and 23.9 (maximum 63) in 21 untreated fields. (Cowan et al.). ARIZONA - *Spanogonicus albofasciatus* heaviest (2 per plant) in Cochise County; 10 per 100 sweeps in Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

COTTON APHID (Aphis gossypii) - ARKANSAS - Noneconomic on 1,754 (29.6 percent) of 5,933 fields. (Boyer, Barnes, June 28). ARIZONA - Scattered in some fields but generally on ends and in shaded locations in Maricopa County. (Ariz. Coop. Sur.).

WHITEFLIES (Trialeurodes spp.) - ARIZONA - Averaged 4 per plant in Cochise County; 200 per plant in field at Waddell. Heavy on adjacent citrus and sunflower foliage in Maricopa County. (Ariz. Coop. Sur.).

SPIDER MITES - GEORGIA - Light to heavy June 28 in scattered fields in southern area (Womack, French) and in Baldwin County (Sirmans). MISSISSIPPI - Tetranychus urticae light in 5, medium in 2, and heavy in 2 fields in delta counties. (Pfrimmer et al.).

TOBACCO

CUTWORMS - WISCONSIN - Damaged untreated Dane County field. (Wis. Ins. Sur.).

SUGARBEETS

PALE-STRIPED FLEA BEETLE (Systema blanda) - COLORADO - Much damage at Longmont, Boulder County, and at Milliken and Johnstown in Weld County; ranged 50-100 per 100 sweeps. (Johnson).

BEET WEBWORM (Loxostege sticticalis) - WYOMING - Larvae averaged 2 per 100 sweeps in Washakie County. (Parshall).

SUGAR-BEET CROWN BORER (Hulstia undulatella) - IDAHO - Infested plants May 7 at Homedale, Owyhee County. Det. by D.M. Weisman. (Scott).

GREEN PEACH APHID (Myzus persicae) - ARIZONA - Ranged 50-100 per plant in colonies in 80-acre field at Kansas Settlement, Cochise County. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - ARIZONA - Ranged 10-25 per plant in Kansas Settlement area, Cochise County. (Ariz. Coop. Sur.). WYOMING - Adults and nymphs averaged 11 per 100 sweeps in Washakie County. (Parshall).

MISCELLANEOUS FIELD CROPS

SUNFLOWER MOTH (Homoeosoma electellum) - TEXAS - Larvae on McLennan County sunflowers; light to medium in Brazos and Hill Counties. (Teetes, Thomas, June 28).

A NOCTUID MOTH (Rachiplusia ou) - INDIANA - Early instars of this species and associated loopers becoming numerous on mint in Jasper and Starke Counties. (Gould).

POTATOES, TOMATOES, PEPPERS

Potato Aphids in Maine - Aphis nasturtii, Macrosiphum euphorbiae, Myzus persicae, and Acyrtosiphon solani still light on untreated potatoes at Presque Isle; numbers and infested plants increased sharply past week. M. euphorbiae and A. nasturtii predominant; M. persicae and A. solani scarce. (Shands et al.).

GREEN PEACH APHID (Myzus persicae) - IDAHO - Alates and apterae abundant in potato fields adjacent to peach orchards in sunny slope areas of Canyon County. (O'Keefe). NEW JERSEY - Continue to be troublesome on eggplant, pepper, potato, and tomato in many areas. (Ins.-Dis. Newsltr.). DELAWARE - Hatching on pepper plantings in Rising Sun area. (Boys, July 4).

POTATO APHID (*Macrosiphum euphorbiae*) - VIRGINIA - Found on tomatoes in several locations in Accomack and Northampton Counties. (Hofmaster).

COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) - IDAHO - Adults appeared on potato plants after emergence from ground June 13 at Aberdeen, Bingham County. (Carpenter). WYOMING - Larvae defoliated nightshade and pigweed at experiment farm in Torrington, Goshen County; controls necessary on potatoes and tomatoes in garden. (Parshall, June 28). COLORADO - Larvae and adults ranged 0-3 per potato plant in Weld County; controls applied in most fields. (Johnson). MAINE - Adults light in previously treated potato field at Lincoln Center, Penobscot County. (Shands et al.).

POTATO FLEA BEETLE (*Epitrix cucumeris*) - WISCONSIN - Present in few scattered potato fields in southeast area; noneconomic, 3 per plant, in one field. (Wis. Ins. Sur.). MAINE - Damage only trace in few potato fields surveyed at Presque Isle; no reports of damage; adult damage severe in one potato garden patch. Few overwintered weevils present on these plants. (Shands et al.).

CABBAGE LOOPER (*Trichoplusia ni*) - SOUTH CAROLINA - Problem during season on Charleston County tomatoes. Aerial sprays effective. (Nettles, July 3). VIRGINIA - Few on tomatoes on Eastern Shore; increase expected. Light trap collections increased past week and should continue if weather remains favorable. (Hofmaster).

TOMATO FRUITWORM (*Heliothis zea*) - ARIZONA - Treatments required in tomato fields at Yuma, Yuma County. (Ariz. Coop. Sur.). OKLAHOMA - Light to medium on Cleveland County tomatoes. (Okla. Coop. Sur.).

STALK BORER (*Papaipema nebris*) - TENNESSEE - Damaged tomatoes in some Davidson County gardens. (Bogard).

BEANS AND PEAS

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - WYOMING - Light damage to early planted beans at experiment farm in Torrington, Goshen County; mating common, few eggs but no larvae. (Parshall, June 28). COLORADO - Adults 1-2 per 100 row feet of beans in Boulder, Larimer, Weld, and Morgan Counties. (Johnson). MISSOURI - Damaged green beans in southeast area. (DiCarlo, June 29). MICHIGAN - Adults in some areas for some time. (Janes, July 1).

PEA WEEVIL (*Bruchus pisorum*) - IDAHO - Averaged 3+ per sweep in margins of several pea fields 4 days after control treatments at Viola, Latah County. Heavier than usual, probably due to one general rather than several movements into the fields. (Futter, Manis). OREGON - Adults numerous on flowers and leaves of peas in garden planting July 2 near Creswell, Lane County. Most eggs on 100 percent of pods ready to hatch. Some first instars already entered seeds. (Westcott).

PALE-STRIPED FLEA BEETLE (*Systema blanda*) - COLORADO - Adults 50-100 per 100 sweeps, damaged beans at Longmont, Boulder County. (Johnson).

BEAN APHID (*Aphis fabae*) - MARYLAND - Heavy on 4 acres of snap beans near Salisbury Wicomico County; controls applied. (U. Md., Ent. Dept.).

SLUGS - NEW YORK - Plentiful in Monroe County; heavily damaged 20-acre bean fields. (N.Y. Wkly. Rpt., July 1).

COLE CROPS

CABBAGE MAGGOT (*Hyalemya brassicae*) - WISCONSIN - Damage serious in few scattered commercial cabbage fields in Kenosha County. Killed about 30 percent of plants in section of one field; full-grown larvae averaged 5 per plant. (Wis. Ins. Sur.).

IMPORTED CABBAGEWORM (Pieris rapae) - MICHIGAN - Greatly increased emergence and activity June 29-30 in Livingston and Oakland Counties; up to 30-40 adults at roadside puddle. (Janes).

DIAMONDBACK MOTH (Plutella xylostella) - UTAH - Very numerous in Delta, Millard County, light traps. (Knowlton).

CABBAGE SEEDPOD WEEVIL (Ceutorhynchus assimilis) - IDAHO - Adults averaged 5 per sweep June 18 on wild mustard in white clover seed fields in Boundary County. (Studer).

CUCURBITS

SQUASH BEETLE (Epilachna borealis) - SOUTH CAROLINA - Widespread in watermelon plantings at Blackville. Probably greatest threat of outbreak in commercial watermelon area in past 40 years. (Nettles et al., July 3).

STRIPED CUCUMBER BEETLE (Acalymma vittatum) - MICHIGAN - Present on cucumbers and squash. (Thompson, July 1).

SQUASH VINE BORER (Melittia cucurbitae) - SOUTH CAROLINA - Approaching peak of infestation at Cuthbert, Charleston County. (Nettles et al., July 3).

MELON APHID (Aphis gossypii) - MARYLAND - Heavy on 6 acres of watermelon near Hebron, Wicomico County. (U. Md., Ent. Dept.).

SPIDER MITES - MARYLAND - Increasing on watermelon at Salisbury. Problem expected next few weeks. (U. Md., Ent. Dept.). ARIZONA - Young cantaloup field treated for Tetranychus spp. at Yuma, Yuma County. (Ariz. Coop. Sur.).

GENERAL VEGETABLES

PALE-STRIPED FLEA BEETLE (Systema blanda) - COLORADO - Adults up to 10 per 100 sweeps on carrots at Hudson, Weld County. (Johnson).

SWEETPOTATO FLEA BEETLE (Chaetocnema confinis) - MARYLAND - Adults decreasing in Wicomico County. (U. Md., Ent. Dept.).

ASIATIC GARDEN BEETLE (Maladera castanea) - MARYLAND - Adult foliage injury heavy to acre of sweetpotatoes near Salisbury, Wicomico County. (U. Md., Ent. Dept.).

SPINACH LEAF MINER (Pegomya hyoscyami) - WISCONSIN - Damage to commercial beet field in Kenosha County higher than in past years: few larvae still present. (Wis. Ins. Sur.).

ONION MAGGOT (Hylemya antiqua) - MICHIGAN - Second-generation adults active on southwest area onions. (Thompson, July 1). Weather still favoring anthomyid maggots. (Janes, July 1).

ONION THRIPS (Thrips tabaci) - COLORADO - Ranged 3-15 per onion plant in Morgan, Weld, and Boulder Counties. (Johnson).

FALSE CHINCH BUG (Nysius ericae) - ILLINOIS - Infested horseradish fields in west-southwestern area. (Ill. Ins. Rpt.).

VARIEGATED CUTWORM (Peridroma saucia) - WISCONSIN - Larvae caused minor damage to red beet field in Kenosha County, but numbered 5 per 4 row feet in one area. Common at bases of uncut alfalfa in area. (Wis. Ins. Sur.).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Carpocapsa pomonella) - VERMONT - Activity expected to continue with warm nighttime temperatures. (MacCollom, June 21). NEW YORK - Flight activity remains light in eastern area with nothing resembling peak to date. Continued wet weather increasing incidence of fungus disease in overwintered larvae. Some entries in Niagara County. (N.Y. Wkly. Rpt., July 1). INDIANA - Virgin female traps in Vincennes orchard trapped 89 compared with 10 previous period: indicates beginning of emergence of first summer brood (second adult flight). Damaged apples with vacated galleries common. (Dolphin, July 1). WASHINGTON - Earliest first-brood pupae June 25 at Yakima, Yakima County. (Johnson).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - CONNECTICUT - Continues to damage peaches in Glastonbury. (Savos, June 25). INDIANA - Adult activity low; "flagged" branches, due to earlier larval feeding, common in some unsprayed peach orchards at Vincennes. (Dolphin, July 1). WASHINGTON - Second-brood entries in peach shoots common in orchards with no first-brood sprays at Parker, Yakima County. (Johnson, June 28).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - INDIANA - Trapped 292 males in Vincennes orchard, about 10 percent of catch 2 weeks ago, indicating much of population in immature stages. (Dolphin, July 1). NEW YORK - First-brood moths began coming to pheromone traps June 24 and to sugar-bait traps June 28 in eastern area. Heavy flights occurred throughout week despite continuous rainfall since June 25. (N.Y. Wkly. Rpt.).

PEACH TWIG BORER (Anarsia lineatella) - NEW MEXICO - Heavy: damaging fruit on apricot trees at Carlsbad, Eddy County. (Durkin). Infested approximately 50-75 percent of peach trees at Corrales, Sandoval County; pupating. (Heninger).

A PHYCITID MOTH (Acrobasis tricolorella) - MICHIGAN - Adults collected June 14-15 in blacklight traps at research station at Entrican, Montcalm County. Det. by

J. Newman. Adults also collected at Grand Mere, Berrien County, and at Fennville, Allegan County. All 3 counties are new records; first confirmed reports south of Oceana County. No information regarding infestations in any commercial cherry orchards in areas where moths were trapped. (Janes).

AEGERIID MOTHS - GEORGIA - Synanthedon pictipes moth emergence lowest since May 24; averaged about one per peach tree June 17 in Peach County. (Yonce). INDIANA - Relatively low number (292) of S. pictipes males caught at Vincennes orchard. (Dolphin, July 1). WASHINGTON - First Sanninoidea exitiosa male emerged in cage trap on peach June 26 at Parker, Yakima County. (Johnson, Hudson).

PLUM CURCULIO (Conotrachelus nenuphar) - CONNECTICUT - Activity on apple appears over. (Savos, June 25). GEORGIA - First-generation females laying eggs in peach fruit June 14 in Peach County. (Yonce). Averaged 11 adults per tree June 21 in county. (Jacklin). TEXAS - Infested peach orchards near Goliad, Goliad County. (Albrecht, June 28).

APPLE MAGGOT (Rhagoletis pomonella) - INDIANA - Adults in unsprayed early variety orchard at Vincennes still at peak activity; females ovipositing. (Dolphin, July 1). CONNECTICUT - First adult captured June 21 on false apple lures at New Haven; five captured at Storrs June 24. Adults continue to emerge at low rate. Adults also captured on false apple lures at Cheshire and Woodstock. Heavy rains tended to keep emergence low. (Savos, July 2). VERMONT - First emergence anticipated within next 7-10 days. (MacCollom, June 21).

APPLE APHID (Aphis pomi) - CALIFORNIA - Medium on apple trees in Grass Valley, Nevada County. (Cal. Coop. Rpt.). OHIO - Colonies continue to increase on young unsprayed apple foliage in Wayne County; aphids 0-300 per leaf. (Rose). CONNECTICUT - In most orchards but numbers still low except for apple orchard at Bethel where buildup on new growth appears rapid. (Savos, July 2).

WHITE PEACH SCALE (Pseudaulacaspis pentagona) - GEORGIA - Females light; few second-generation eggs appeared June 13 (Yonce), crawlers June 24 in Peach County (Jacklin). FLORIDA - Mostly adults; females developing eggs in peach orchards at Gainesville, Alachua County. Det. by L.C. Kuitert. (Kuitert).

SAN JOSE SCALE (Aspidiotus perniciosus) - FLORIDA - Severe on peach trees June 27 at Altoona, Lake County. (Bentley).

EUROPEAN RED MITE (Panonychus ulmi) - MISSOURI - In treated apple orchards: Moderate to severe in central area, light to moderate in west-central area. (Wkly. Rpt. Fr. Grs., July 2). INDIANA - Numbers reduced by miticides but still threat in commercial orchards at Vincennes. (Dolphin, July 1). OHIO - Averaged 4-5 per leaf on untreated apple foliage in Wayne County; 1-2 per leaf on treated foliage. Numerous eggs indicate possible rapid increase soon. (Forsythe). CONNECTICUT - Still low on apple in all reporting localities. Hot weather of past few days may favor buildup. (Savos, July 2).

SPIDER MITES (Tetranychus spp.) - CONNECTICUT - Still low on apple in all reporting localities. Hot weather of past few days may favor buildup. (Savos, July 2). ALABAMA - T. urticae heavy on several apple and peach trees at Auburn, Lee County. (Bagby et al.).

RED-HUMPED CATERPILLAR (Schizura concinna) - CALIFORNIA - Larvae moderate on English walnut at Colusa, Colusa County, and heavy at Plymouth, Amador County; widespread on fruit and ornamental trees in northern area. Recurring populations in early 1968 indicate another year of heavy damage. (Cal. Coop. Rpt.).

WALNUT CATERPILLAR (Datana integerrima) - OKLAHOMA - Medium on Muskogee County pecan trees. (Okla. Coop. Sur.). OHIO - Hatch begun in June in Mohican State Forest in Ashland County. (Schalip). Damage expected with larval feeding. (Rose).

FALL WEBWORM (*Hyphantria cunea*) - OKLAHOMA - Infested 15 percent of pecan foliage in Marshall County; medium to heavy on pecan and other trees in Mayes, Osage, and Cleveland Counties. (Okla. Coop. Sur.).

PECAN NUT CASEBEARER (*Acrobasis caryae*) - NEW MEXICO - Found on pecans in northern Eddy County near county line. Most northern record in State. (Malone).

AN APHID (*Panaphis juglandis*) - CALIFORNIA - Nymphs and adults medium on walnut in Grass Valley, Nevada County, for a new county record. This species slowly spreading. (Cal. Coop. Rpt.).

WALNUT HUSK FLY (*Rhagoletis completa*) - OREGON - First adults reported at The Dalles, Wasco County; 4 adults (one alive) in one trap and one adult each in 2 other traps. Traps placed June 18 and 25; checked July 2. (Brown).

CITRUS

COTTONY-CUSHION SCALE (*Icerya purchasi*) - ARIZONA - Heavy in grove near Waddell, Maricopa County; leaves covered with honeydew. *Vedalia* (*Rodolia cardinalis*) released in grove in county during first week of June failed to become established; controls applied. (Ariz. Coop. Sur.).

YELLOW SCALE (*Aonidiella citrina*) - CALIFORNIA - Heavy on citrus at San Jose, Santa Clara County. (Cal. Coop. Rpt.).

CITRUS THRIPS (*Scirtothrips citri*) - ARIZONA - Nurseries treated to protect young bud stock at Yuma, Yuma County. (Ariz. Coop. Sur.).

CITRUS FLAT MITE (*Brevipalpus lewisi*) - ARIZONA - Scarring lemons and tangerines on Yuma Mesa, Yuma County; controls required. (Ariz. Coop. Sur.).

OTHER TROP. & SUBTROP. FRUITS

AN ARMORED SCALE (*Hemiberlesia lataniae*) - CALIFORNIA - Heavy on avocado trees at Montclair, San Bernardino County. (Cal. Coop. Rpt.).

A FALSE POWDER-POST BEETLE (*Malagus confertus*) - CALIFORNIA - Medium on twigs and trunks of olive nursery stock at Hayward, Alameda County. (Cal. Coop. Rpt.).

AN ERIOPHYID MITE (*Oxycenus maxwelli*) - CALIFORNIA - Medium on olive nursery stock at North Hollywood, Los Angeles County. (Cal. Coop. Rpt.).

SMALL FRUITS

WESTERN GRAPE LEAF SKELETONIZER (*Harrisina brillians*) - ARIZONA - Adults, eggs, and larvae abundant in vineyard near Luke Air Force Base, Maricopa County; damaged 50 percent of leaves. (Rover).

ORNAMENTALS

WEEVILS (*Brachyrhinus* spp.) - NEVADA - Adult damage heavy on lilac and privet at Minden and Gardnerville, Douglas County, and at Reno and Sparks, Washoe County. (Nev. Coop. Rpt.). MICHIGAN - *B. sulcatus* infested yew in 5 nurseries at Utica and Warren during last week of June. Adults light, but generally distributed through plantings. Certification withheld pending treatment. (Hanna). CONNECTICUT - *B. sulcatus* most destructive insect infesting yew, rhododendron, azalea, and other valuable ornamentals. (Savos, June 26).

A WEEVIL (*Rhynchites bicolor wickhami*) - NEVADA - Damaged cultivated and wild roses at Reno, Washoe County. (Specht).

BAGWORM (Thyridopteryx ephemeraeformis) - OKLAHOMA - Medium to heavy on evergreen trees in central and north-central areas. (Okla. Coop. Sur.). ARKANSAS - Increasing in central area. (Barnes).

MIMOSA WEBWORM (Homadaula anisocentra) - MARYLAND - Larvae beginning to appear on mimosa and honeylocust in southern areas. (U. Md., Ent. Dept.). MISSOURI - Larvae fed on southeast area mimosa. (DiCarlo, June 29).

ARMORED SCALES - FLORIDA - Pseudonidia clavigera infested camellia June 24 and 28 at commercial nurseries at Clearwater, Pinellas County (Custead) and June 25 at nursery in Springhead, Hillsborough County (Vaughan). VIRGINIA - Hemiberlesia lataniae females with average of 2-4 eggs June 5 at Richmond; occasional crawler present. (Weidhaas). MICHIGAN - Diaspis carueli infested junipers at several downriver Detroit nurseries in late June. Will remain under restriction until treatment effective. (Hanna).

FOUR-LINED PLANT BUG (Poecilocapsus lineatus) - NEW JERSEY - Troublesome in central counties; heavy damage on Union County chrysanthemums. (Ins.-Dis. Newsltr.).

EUROPEAN EARWIG (Forficula auricularia) - CALIFORNIA - Heavy in yards, shrubbery, and gardens in many northern counties. (Cal. Coop. Rpt.). UTAH - Numerous and annoying in home gardens and about homes at Centerville and Bountiful, Davis County. (Knowlton). VERMONT - Bothering gardeners and homeowners. Severe infestation at Montpelier. (MacCollom).

TWO-SPOTTED SPIDER MITE (Tetranychus urticae) - CALIFORNIA - Heavy generally on carnation nursery stock in Mt. Shasta, Siskiyou County. (Cal. Coop. Rpt.).

FOREST AND SHADE TREES

BLACK HILLS BEETLE (Dendroctonus ponderosae) - SOUTH DAKOTA - Control program initiated June 15 southwest of Lead, Lawrence County. Total of 1,050 trees to be treated on 9,500 acres of Black Hills National Forest by end of July. During winter of 1967-1968, total of 500 trees treated by felling and burning in area of Black Hills National Forest near Nemo, Lawrence County. (Metcalf, Jones).

FIR ENGRAVER (Scolytus ventralis) - CALIFORNIA - Increasing in several areas in Little Grizzly Sale Area of Lassen National Forest, Plumas County. (Rea, USFS). Killed over 100 white firs in 150-acre stand in Eddy Gulch, Salmon District, Six Rivers National Forest, Siskiyou County. (Osterhoudt, USFS). Killed over 50 white firs in 50-acre stand in McDowell Camp area, Klamath National Forest. (Irvine, USFS).

DOUGLAS-FIR TWIG WEEVIL (Cylindrocopturus furnissi) - CALIFORNIA - Damaged 100 Douglas-firs in 20-acre stand in Haman Ridge Plantation, Six Rivers National Forest, Trinity County. This is third record since 1961 of species in State. (Brown, Perry, USFS).

A PINE NEEDLE-SHEATH MINER (Zelleria haimbachi) - OREGON - Defoliated ornamental Jeffrey pines in Portland; damaged new growth. Pupation about 50 percent. Infestation spotted, but most Jeffrey pines in city have few infested tips. (Larson).

A GELECHIID MOTH (Exoteleia nepheos) - OHIO - Adult emergence begun in Lake County. Population sampled July 2 consisted of 15 percent larvae, 4 percent pupae, 33 percent parasitized, 38 percent emerged, and 10 percent dead. (Campbell).

JACK-PINE BUDWORM (Choristoneura pinus) - WISCONSIN - Development third instar to pupa. Natural control factors, including weather, reduced populations in Douglas, Bayfield, and Washington Counties. (Wis. Ins. Sur.).

CONIFER SAWFLIES - NEW HAMPSHIRE - Diprion similis larvae third to half grown. No noticeable damage at Hooksett. (Mason, July 1). VERMONT - Neodiprion lecontei

adults still active in Franklin County. (MacCollom, June 21).

BALSAM TWIG APHID (*Windarus abietinus*) - CALIFORNIA - Heavy on white firs in Grass Valley, Nevada County. (Cal. Coop. Rpt.).

PINE TORTOISE SCALE (*Toumeyella numismaticum*) - MICHIGAN - Crawlers active: maximum emergence should be completed July 6. (Wallner).

PINE NEEDLE SCALE (*Phenacaspis pinifoliae*) - WYOMING - Hatching at Cheyenne and Pine Bluffs, Laramie County, and at Torrington, Goshen County. (Parshall, June 28).

PALMERWORM (*Dichomeris ligulella*) - OHIO - Heavy; defoliated oaks in Mohican, Brush Creek, Hocking, and Zaleski State Forests and on private land over eastern area of State. Many oaks completely defoliated. Dieback and some mortality of oaks expected. (Soine et al.). Infested mostly pin oak and red oak and some crab apple and chestnut in Mahoning and Portage Counties. (Kelly). Larvae collected in northeastern area pupating by July 3. (Walker).

MOURNING-CLOAK BUTTERFLY (*Nymphalis antiopa*) - UTAH - Larvae damaged elm foliage at Salt Lake City, Salt Lake County. (Knowlton). CONNECTICUT - Feeding on elm, willow, and hawthorn. (Savos, June 26).

FALL WEBWORM (*Hyphantria cunea*) - KANSAS - First-generation appearing in Riley County. (Gates).

SATIN MOTH (*Stilpnotia salicis*) - VERMONT - Larvae infested lombardy poplar at Burlington, Chittenden County. (MacCollom, June 21). OREGON - Newly emerged adult taken in light trap June 24 at Eugene, Lane County. (Goeden).

ELM LEAF BEETLE (*Pyrhalta luteola*) - CALIFORNIA - Larvae and adults heavy and damaging elm at Colusa, Colusa County, and Fresno, Fresno County. (Cal. Coop. Rpt.). UTAH - Some damage to elm foliage at Magna, Granger, and Holladay in Salt Lake County. (Knowlton). ARIZONA - Heavy on elms June 15 in Mohave County. (Darden). NEW MEXICO - Heavy on Siberian elms at Placitas and Corrales, Sandoval County; skeletonized leaves heavily. Pupating at Corrales. (Heninger). TEXAS - Heavy in Upton, Knox, Wilbarger, and Motley Counties. (Neeb et al., June 28). ALABAMA - Damage more severe to elms along streets and on lawns in Lee, Macon, and Tallapoosa Counties; second generation feeding on leaves. (McQueen). MISSOURI - Second-generation larvae active in southeast area. (Jones, June 29). ILLINOIS - Larvae feeding on elm foliage, especially Chinese elms. (Ins. Sur. Bull.). DELAWARE - Larvae damaged some elms in several areas of State. (Burbutis).

PERIODICAL CICADAS (*Magicicada* spp.) - OHIO - Very active in some areas despite predation and controls. Generally declining, probably due to adults nearing end of life span plus bird predation. Peak activity of Brood VIII apparently over in Columbiana, Trumbull, Mahoning, and Jefferson Counties. Migration and injury limited due to cool weather; egg laying damage continues. Adults will be difficult to find in most locations in brood emergence area within week. (Forsythe). TENNESSEE - *M. septendecim* damaged catalpa trees in Knox County. (Williams).

GIANT BARK APHID (*Longistigma caryae*) - ARIZONA - Heavy in few sycamore trees at Red Rock Crossing in Oak Creek at Sedona, Coconino County. Much honeydew on ground under trees. Collected May 27, 1968, by D.B. Carver and R.A. Countryman. Det. by P. Min. This is a new State record. (Ariz. Coop. Sur.).

ARMORED SCALES - CALIFORNIA - *Aspidiotus juglansregiae* heavy on cottonwood trees at Yucaipa, San Bernardino County. *Parlatoria oleae* medium on ash trees at Willows, Glenn County. (Cal. Coop. Rpt.). VERMONT - *Lepidosaphes ulmi* crawlers settled and molting on Russian-olive. (MacCollom).

COTTONY MAPLE SCALE (*Pulvinaria innumerabilis*) - ILLINOIS - Hatching; young crawlers moving to leaves to feed. (Ins. Sur. Bull.). NEW JERSEY - Crawlers active,

infested many varieties of trees. (Ins.-Dis. Newsltr.). VERMONT - Egg masses hatching on honeylocust. (MacCollom).

A GALL MIDGE (Caryomyia persicoides) - VIRGINIA - Medium locally on ornamental hickory in Scott County. (Reynolds, Amos, June 27).

INSECT DETECTION

New State Records

A LACE BUG (Dictyla echii) - VIRGINIA, WEST VIRGINIA, and MARYLAND. (p. 658).

GIANT BARK APHID (Longistigma caryae) - ARIZONA - Heavy on sycamore trees at Red Rock Crossing in Oak Creek at Sedona, Coconino County. Collected May 27, 1968, by D.B. Carver and R.A. Countryman. Det. by P. Min. (p. 646).

AN ICHNEUMON WASP (Bathyplectes curculionis) - ARKANSAS - Reared from alfalfa weevil larvae collected May 9, 1968, in Sharp County by B.A. Dumas. Det. by L.M. Walkley. B. Puttler reared single specimen from alfalfa weevil larvae collected April 11, 1968, in same county. (p. 650).

New County Records

ALFALFA WEEVIL (Hypera postica) - NEW HAMPSHIRE - Carroll County. (p. 633). MISSOURI - Macon and Scotland Counties. (p. 634). SOUTH DAKOTA - Stanley County. OREGON - Columbia County. (p. 634).

CLOVER HEAD WEEVIL (Hypera meles) - MISSOURI - Bollinger, Douglas, Laclede, Morgan, Ozark, Reynolds, Wayne, Cooper, and Wright Counties. (p. 634).

CLOVER SEED WEEVIL (Miccotrogus picirostris) - MISSOURI - Grundy, Knox, Mercer, Shelby, Buchanan, Carroll, Lafayette, Platte, and Ray Counties. (p. 634).

A JAPANESE WEEVIL (Calomycterus setarius) - MISSOURI - Clay County. (p. 634).

MEADOW SPITTLEBUG (Philaenus spumarius) - MISSOURI - Bollinger, Macon, Linn, Randolph, and Sullivan Counties. (p. 635).

A PHYCITID MOTH (Acrobasis tricolorella) - MICHIGAN - Montcalm, Berrien, and Allegan Counties. (pp. 642-643).

AN APHID (Panaphis juglandis) - CALIFORNIA - Nevada County. (p. 644).

CORRECTIONS

CEIR 18(26):590 - SAN JOSE SCALE (Aspidiotus perniciosus) - WASHINGTON - ... apples June 1 ... (Gregorick) should read June 11 ... (Gregorick). (Gregorick).

MAN AND ANIMALS

MOSQUITOES - UTAH - Continue troublesome throughout irrigated areas of Millard County and at Nephi and Mona in Juab County. (Knowlton). WYOMING - Larvae of *Aedes dorsalis*, *A. increpitus*, *A. flavescens*, *A. vexans*, and *A. fitchii* collected May 20 and May 27 at Cheyenne, Laramie County. Adults still annoying. (Rich). IOWA - Various species very annoying in central area. (Iowa Ins. Inf., June 22). WISCONSIN - Activity curtailed by cool weather but populations still high in lowland areas. Abundance of flood pools due to recent rains may result in severe and widespread problems in few weeks. Mosquito annoyance to cattle severe at many locations. (Wis. Ins. Sur.). VERMONT - Annoying in all areas. (MacCollom).

SCREW-WORM (*Cochliomyia hominivorax*) - Total of 121 cases reported in U.S. June 30-July 6 as follows: TEXAS - Aransas 2, Atascosa 2, Bexar 1, Brewster 7, Brooks 15, Coleman 1, Concho 2, De Witt 10, Duval 2, Edwards 2, Frio 1, Goliad 2, Gonzales 3, Guadalupe 1, Hidalgo 2, Jim Hogg 1, Jim Wells 4, Karnes 3, Kenedy 5, Kinney 2, Kleberg 9, Lampasas 1, Live Oak 5, McMullen 2, Medina 5, Nueces 3, Pecos 1, Refugio 2, San Patricio 3, Starr 3, Sterling 2, Tom Green 3, Uvalde 2, Val Verde 1, Wilson 2; ARIZONA - Cochise 1, Maricopa 1, Santa Cruz 1, Yavapai 1, Yuma 2; NEW MEXICO - Hidalgo 1; CALIFORNIA - San Diego 2. Total of 278 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Territorio sur de Baja California 42, Sonora 76, Chihuahua 18, Coahuila 73, Nuevo Leon 29, Tamaulipas 40. Total of 18 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 75,268,000; New Mexico 400,000; Arizona 14,060,000; California 1,220,000; Mexico 57,200,000. (Anim. Health Div.).

NORTHERN CATTLE GRUB (*Hypoderma bovis*) - IDAHO - Adult activity severe in Clearwater County for past 4 weeks and becoming intense. Cattle forced to pasture in dense shade throughout day and into evening. Egg laying on pastured cattle in many northern areas June 14-21. (O'Keeffe).

FACE FLY (*Musca autumnalis*) - IDAHO - Adults 0-30 per face on cattle in northern area with most herds at lower elevations averaging 8-12 per face. Individual animals in many herds have weepy eyes and noticeably bothered by flies. (O'Keeffe, June 19). Averaged less than 14 per face, most herds averaging less than 5 per face, in north-central and southwestern areas; less than 3 per face in Idaho, Valley, Washington, and Adams Counties. (O'Keeffe, June 28). MISSOURI - Ten-cow counts on 6 herds in central area averaged 3.5, 0.4, 1.7, 1.0, 0, and 1.2. (Thomas, June 29). WISCONSIN - Annoyance light in most counties. (Wis. Ins. Sur.). ILLINOIS - Average per head by district: Southeast 1, west 5, southwest 5.0, northwest 3.4, and west-southwest 9.0. (Ill. Ins. Rpt.). INDIANA - Ranged 2-11 per animal on pastured cattle in northern districts. (Huber). VIRGINIA - Averaged 25 per head on 3 herds totaling one hundred cattle in Montgomery County. (Turner, July 1). VERMONT - Troublesome on pastured cattle in all areas. (MacCollom).

HORN FLY (*Haematobia irritans*) - IDAHO - Ranged from light to 200 per side on pastured cattle throughout northern area June 20; ranged 25-175 per side on pastured cattle throughout north-central and southwestern areas June 28. (O'Keeffe). WYOMING - Up to 825 per head in 5 herds checked in Goshen and Laramie Counties. Heaviest (averaged 700 per head) on herd near Guernsey, Goshen County. One Laramie County herd averaged 58 per head; trace numbers on 3 herds. (Burkhardt, June 28). NEBRASKA - Averaged 300-400 per animal on herds checked in Platte, Stanton, and Lancaster Counties. (Campbell). OKLAHOMA - Ranged 800-1,000 per mature cow throughout central, north-central, and northwest counties. (Okla. Coop. Sur.). MISSOURI - Averages on 10 cows from 6 herds in central area were 177.5, 18.7, 57.7, 245.0, 73.9, and 318.5. (Thomas, June 29). ILLINOIS - Average per head by district: Southeast 340, west 66, southwest 154, northwest 3, and west-southwest 86. (Ill. Ins. Rpt.). WISCONSIN - Annoyance light in most counties. (Wis. Ins. Sur.). INDIANA - Ranged 5-75 per animal on pastured cattle in northern districts. (Huber). GEORGIA - Heavy on beef cattle throughout State. (Nolan, June 28). VERMONT - Annoying pastured cattle in all areas. (MacCollom).

STABLE FLY (*Stomoxys calcitrans*) - NEBRASKA - Increasing, 1-2 per leg on 2 feedlot herds in Platte County; ranged 1-4 (averaged about 2.5) per leg on 3 feedlot herds in Stanton County; ranged 5-6 per leg in one Lancaster County feedlot. (Campbell). WISCONSIN - Annoyance to cattle moderate in most areas, severe in portions of Calumet County. (Wis. Ins. Sur.). ILLINOIS - Average per head by district: Southeast 2.5, west 0.3, southwest 3.7, northwest 0.0, and west-southwest 13. (Ill. Ins. Rpt.). INDIANA - Ranged 2-12 per animal on pastured cattle in northern districts. (Huber).

TABANID FLIES - UTAH - Deer and horse flies annoying livestock in Oak Creek Canyon and at Abraham and Delta areas, Millard County. (Knowlton). WISCONSIN - Deer flies numerous in most areas near water. Annoyance severe on warmer days; some biting of man reported. (Wis. Ins. Sur.). TENNESSEE - *Tabanus* spp. heavier than usual over southwestern part of State. (Locke).

HARD-BACKED TICKS - OREGON - *Ixodes pacificus* and *Dermacentor occidentalis* spotted, widely scattered to sporadically heavy in brush along streams in Port Orford area of Jackson and Curry Counties June 28. (Gresbrink).

BENEFICIAL INSECTS

LADY BEETLES - NEVADA - *Hippodamia convergens* adults averaged 2 and larvae 4 per sweep in pea aphid-infested alfalfa at Fallon, Churchill County. (Arnett). ARIZONA - *H. convergens* averaged 1 per cotton plant in Cochise County and 20 per 100 sweeps in cotton in Maricopa County. (Ariz. Coop. Sur.). NEW MEXICO - Lady beetles averaged 1-5 per 25 sweeps in alfalfa at Corrales, Sandoval County (Heninger), and 1-6 per 100 cotton squares checked in southern Dona Ana County (Elson, Dickerson). UTAH - Adults and larvae moderate at Magna, Salt Lake County, in second-crop alfalfa where pea aphid ranged 65-500+ per 10 sweeps. Increasing in alfalfa at Erda and Lakepoint, Tooele County. (Knowlton). WYOMING - Ranged 3-80 (average 32) per 100 sweeps on alfalfa in Platte, Goshen, and Laramie Counties June 28. Larvae averaged 10 per 100 sweeps in alfalfa of Big Horn Basin week ending July 5. (Parshall). ARKANSAS - *H. convergens* adults numerous on rocks and vegetation at 1,750 feet on Mount Nebo, Yell County. (Boyer). GEORGIA - Heavy on Lee County peanuts. (French, June 28).

HOODED BEETLES (*Notoxus* spp.) - NEW MEXICO - Averaged one per cotton plant at Roswell, Chaves County. (Mathews). Large numbers in cotton in Lea County. (Durkin). OKLAHOMA - Ranged 10-25 per 200 row feet in cotton checked in Tillman and Jackson Counties. (Okla. Coop. Sur.).

DAMSEL BUGS (*Nabis* spp.) - ARIZONA - Averaged 1 per cotton plant in Cochise County and 200 per 100 sweeps in alfalfa in Maricopa County. (Ariz. Coop. Sur.). NEW MEXICO - Light to medium in cotton in Lea County. (Durkin). Light in alfalfa at Corrales, Sandoval County. (Heninger). Averaged 4 per 25 sweeps in alfalfa in southern Dona Ana County. (Dickerson, Elson). UTAH - *N. alternatus* moderate in second-crop alfalfa at Magna, Salt Lake County, where pea aphid ranged 65-500+ per 10 sweeps. Increasing in alfalfa at Erda and Lakepoint, Tooele County. (Knowlton). WYOMING - *Nabis* sp. averaged 12 per 100 sweeps in alfalfa in Goshen, Platte, and Laramie Counties. (Parshall, June 28).

BIG-EYED BUGS (*Geocoris* spp.) - UTAH - Moderate in second-crop alfalfa at Magna, Salt Lake County, where pea aphid ranged 65-500+ per 10 sweeps. Increasing in alfalfa at Erda and Lakepoint, Tooele County. (Knowlton). ARIZONA - Averaged 20 per 100 sweeps in cotton in Maricopa County. (Ariz. Coop. Sur.).

LACEWINGS - GEORGIA - Heavy on Lee County peanuts. (French). WYOMING - *Chrysopa* spp. larvae averaged 8 per 100 sweeps in 2 alfalfa fields of Washakie County. (Parshall). UTAH - *Chrysopa* spp. numerous in many Millard County alfalfa fields. (Knowlton).

SYRPHID FLIES - WYOMING - Larvae averaged 10 per 100 sweeps in alfalfa in Hot Springs and Washakie Counties. (Parshall). GEORGIA - Heavy on Lee County peanuts. (French, June 28).

A LEAF-CUTTING BEE (*Megachile rotundata*) - IDAHO - First males emerged July 1 at Moscow, Latah County; stored under relatively natural conditions during winter and allowed to emerge without incubation. Seed alfalfa just coming into full bloom. (Manis). First emergence from outside storage at Jerome County June 26; in 1967, same population emerged July 10. (Priest).

AN ICHNEUMON WASP (*Bathyplectes curculionis*) - ARKANSAS - Reared from alfalfa weevil larvae collected May 9, 1968, in Sharp County by B.A. Dumas. Det. by L.M. Walkley. This is a new State record. B. Puttler reared a single specimen from alfalfa weevil larvae collected April 11, 1968, in Sharp County; *B. curculionis* adults readily swept from field at time. (Boyer). No *B. curculionis* found in Mississippi County week ending June 28. (Dumas).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BOLL WEEVIL (*Anthonomus grandis*) - TEXAS - In High Plains area, large percentage of early squares punctured in Mitchell County. Overwintered weevils present in cotton in Donley County. Total of 8 overwintered weevils detected in 7 fields in Kent County, inside control zone. Punctured squares detected in additional field in area. Sex attractant traps located in Crosby, Lynn, Borden, and Dawson Counties to be inspected twice weekly. (Almand, July 2). For Boll Weevil in other areas see page 637.

CEREAL LEAF BEETLE (*Oulema melanopus*) - MICHIGAN - Summer adults becoming abundant. Many will feed on field corn. (Jones, July 1). Well established in Lower Peninsula north of 45 degrees latitude. During June, total of 33 adults and 428 larvae collected in 76,000 sweeps of grasses and grain; 1 adult and 98 larvae taken in 250 sweeps of oatfield. (Hanna, Pilarski, Nyberg). OHIO - First new summer adults on oats in central area June 28. New summer adults plentiful on terminal oat foliage in Franklin County by July 2. (Lyon). WISCONSIN - Cooperative survey recently conducted in 22 eastern and southern counties. Number of oatfields surveyed varied from 4 per township to 2 per township; 400 sweeps made in each field. Total of approximately 350,000 sweeps made during survey. (Wis. Ins. Sur.). Results of survey negative. (PPC).

GRASS BUGS - UTAH - Very numerous on orchard grass at Centerville, Davis County. Population 20 percent adults. (Knowlton).

GRASSHOPPERS - NEVADA - *Aulocara ellioti* and *Oedaleonotus enigma* predominant; ranged 8-25 per square yard on 4,000-5,000 acres on "Old Burn" east of Orovala, Humboldt County. Some migrations to cultivated areas. (Lundahl, Peters). UTAH - Grasshoppers per square yard ranged 1-5 at McCormish on alfalfa and 3-10 in spots at Fillmore, Millard County; only 2 percent winged. Nymphs spotted with little damage at Leamington, Millard County. (Knowlton). ARIZONA - *Melanoplus sanguinipes* averaged 20-30 per square yard in 3,000 acres of rangeland west of Prescott, Yavapai County. (Ariz. Coop. Sur.). NEW MEXICO - Grasshoppers averaged 8-25 per 25 sweeps in alfalfa at Corrales, Sandoval County. (Heninger). OKLAHOMA - Ranged 5-20 per square yard in Texas, Beaver, Cimarron, Harper, Woodward, Major, and Woods Counties June 14-21. Averaged 20 per square yard in 15,000 acres of Texas County, 25,000 acres of Beaver County, and 25,000 acres of Cimarron County. *Melanoplus differentialis*, *M. blvittatus*, *Ageneotettix deorum*, *Philibostroma quadrimaculatum*, *Aulocara ellioti*, *Amphitornus coloradus*, *Drepanopterna femoratum*, and *Hesperotettix* spp. dominant. Hatch about complete for all species. Robber flies, bee flies, and blister beetles abundant throughout rangeland. WYOMING - Late-season range species beginning to hatch in Glendo research plots June 19-20: *Philibostroma quadrimaculatum*

9 and *Opeia obscura* 1 per 100 square feet. Hatch of early season range species almost complete; *Ageneotettix deorum* (most abundant) counts per 100 square feet in research areas averaged 35 at Guernsey and 20 at Glendo. Total of 22 range species in research areas averaged 87 per 100 square feet at Glendo and 104 at Guernsey. (Pfadt). Infested about 50,000 acres near Lander, Fremont County; 7,000 acres near Douglas, Converse County. Few grasshoppers in Johnson, Sheridan, Carbon, and Crook Counties. (Patch, June 28). COLORADO - *Melanoplus* spp. nymphs per square yard in corn ranged 0-2 in Masters area, Weld County, and 2-6 in Wiggins area, Morgan County. Damage heavy in some fields, light in others. Nymphs moving into sugarbeets in Greeley and Kersey area, Weld County, and in Wiggins and Fort Morgan area, Morgan County; ranged 0-3 per square yard. In some cases whole fields infested and in others only margins. Nymphs ranged 4-5 per square yard on carrots in Hudson area of Weld County. (Johnson). NORTH DAKOTA - Economic, up to 40 (average 5-10) per square yard, in Sheyenne National Grasslands in Richland and Ransom Counties. First to fourth instars of *Melanoplus sanguinipes* and *Ageneotettix deorum* predominant. Alfalfa fields surrounding this area with field infestations up to 30 and marginal counts 5-40 per square yard. Dominant species in alfalfa include: First and fourth instar *M. sanguinipes*, third and fourth instar *M. bivittatus* and *M. packardii*, and first and second instar *M. femurrubrum*. (Toczek, Grasser). SOUTH DAKOTA - Heavy infestations developing in Sanborn, Davison, Aurora, Jerauld, and Beadle Counties. Development ranged from first to fifth instars. Other areas in State will also experience damage as young grasshoppers develop. Infestation underway in west-central Sanborn County. First to fifth instar *Melanoplus bivittatus* and first to fourth instar *M. differentialis* counts per square yard averaged 30 in alfalfa and 40-50 along roadsides and in field margins in more heavily infested areas. (Burge). Remain threatening near Oral, Fall River County, with 4 per square yard in fields and 15-20 along margins. Species included *M. bivittatus*, second instar to adult, *M. differentialis*, second to fifth instar, and *M. femurrubrum*, first to fourth instar. Mostly 1-3 (some 8-15) per square yard on rangeland in western Fall River and Custer Counties. Counts per square yard ranged 8-15 in some alfalfa and up to 20 along some roadsides in more heavily infested areas from Scenic to Wasta, Pennington County. Localized infestation, up to 100 per square yard, in shelterbelts. Species included *M. bivittatus* and *M. differentialis*. (Zimmerman, Petersen). NEBRASKA - Mostly third instars ranged 8-12 per square yard in Johnson County alfalfa field. (Keith et al.). MISSOURI - Small grasshoppers moderate, 5-10 per square yard, in widely scattered areas along field margins, roadways, and waste or idle land. (Munson et al., June 29). INDIANA - Second instars 9-15 per 25 sweeps on Ripley County alfalfa. (Matthew).

GYPSY MOTH (*Porthetria dispar*) - VERMONT - Larvae developing slowly in cold, wet weather. (MacCollom, June 21).

JAPANESE BEETLE (*Popillia japonica*) - CONNECTICUT - Began appearing week ending July 3. (Savos). MARYLAND - Adults active in St. Marys and Prince Georges Counties. (U. Md., Ent. Dept.). VIRGINIA - Adults moderate on acre of soybeans in Charlotte County. (Hendrick, June 27). First adult noted in Fluvanna County. (Watts, June 29). Numerous with severe damage to weeping birch and Chinese elm at location in Montgomery County (Pienkowski); feeding on hollyhock, rose, and grape in county (Allen). First beetles in Wythe County this year in cornfield and in pasture; occurrence 9 days earlier than in 1967 and 7 days earlier than in 1966. Numbers light. (Francis, June 28). SOUTH CAROLINA - First report in Lancaster County June 25, 1968. Collected by F.W. Cannon. (Nettles).

MORMON CRICKET (*Anabrus simplex*) - ARIZONA - Found in 3 locations in Kaibab North, Coconino County. (Adams).

PINK BOLLWORM (*Pectinophora gossypiella*) - CALIFORNIA - Small shipments of sterile moths continue to be received at Bakersfield. No larvae collected in Kern County or in cotton-growing areas to north. Situation variable in desert districts; however, infestation general and heavy in some areas. Based on blossom survey, larvae estimated up to 2,000 per acre in Holtville area, Imperial County. Infestation moderate in northern Imperial Valley; larvae range up to 400 per acre.

All sampled cotton fields in Blythe area of Riverside County infested; up to 39 percent infestation in individual fields. Controls applied on individual basis by growers; general treatment will probably begin by mid-July. (Cal. Coop. Rpt.). ARIZONA - Larvae being found in all fields with any blooms at Safford, Graham County; infestation as high as 10-15 percent in some fields. (Pearson). From 1 to 6 insecticide applications made by individual growers at Yuma. Larvae found from Gadsden to Parker in north to Texas Hill in east. Some contract operations on district basis contemplated in Yuma County. (McHenry). Very few larvae found in rosetted blooms in Maricopa, Pinal, Pima, and Cochise Counties. (Ariz. Coop. Sur.). NEW MEXICO - No larvae found during bloom check of 1,500 feet (150 blooms) of Pima cotton. (Elson, Dickerson). Moth counts in 10 sex lure traps in southern Dona Ana County: 6 on June 30; 7 on July 2; 10 on July 3. (Adams).

RANGE CATERPILLAR (*Hemileuca oliviae*) - COLORADO - Second and third instars reported on approximately 2,500 acres in southern Las Animas County June 26. Hatch occurred about June 1. Colonies not yet dispersed, but infestation expected to average light. (Watson).

WHITE-FRINGED BEETLES (*Graphognathus* spp.) - ALABAMA - Adult emergence very heavy since June 2 in old infested area in Lee County. (Barwood).

HAWAII INSECT REPORT

Turf, Pasture - Adults of a GRASS WEBWORM (*Herpetogramma licarsialis*) light on Kikuyu grass in Waiakamoi, Maui, at 4,250 feet elevation. Highest elevation recorded for this species to date. (Funasaki). Larvae completely denuded 18,000-square-yard strip of Kikuyu grass on Honomalino Ranch, South Kona, Hawaii Island, at 1,950 feet elevation; highest record for larval activity to date. (Davis, Miyahira, Yoshioka).

Fruits - Nymphs and adults of an ARMORED SCALE (*Phenacaspis cockerelli*) heavy, 25 per leaf, on mango trees in Lahaina, Maui. (Miyahira).

Ornamentals - PACIFIC BEETLE COCKROACH (*Diploptera punctata*) caused extensive damage to *Euphorbia splendens* in KaaNapali, Maui, and sporadic damage on cypress in Makawao, Maui, and Kamuela, Hawaii Island. (Miyahira). SOUTHERN GREEN STINK BUG (*Nezara viridula*) heavy on various weeds and ornamentals in Kamuela, Hawaii Island. Eggs of *Trichopoda pennipes* var. *pilipes* (a tachina fly) noted on all of a group of 6 stink bugs. (Yoshioka).

Man and Animals - MOSQUITOES - Total of 95 *Aedes vexans* nocturnus and 2,932 *Culex pipiens quinquefasciatus* taken in 48 light traps on Oahu during June. *A. vexans* nocturnus highest in Haleiwa and Punaluu; *C. pipiens quinquefasciatus* highest in Waiialua. (Mosq. Cont. Br., Dept. of Health).

Beneficial Insects - Larvae of a TORTRICID MOTH (*Apotoforma* sp.), an introduced species, medium on wild blackberry in Waiakamoi, Maui. Larvae of *Schreckensteinia festaliella* (a heliodinid moth) very light in same area. (Davis, Miyahira). A SCIOMYZID FLY (*Sepedon sauteri*) now established in Hanapepe Valley; third establishment on Kauai for this species. (Sugawa).

WEATHER OF THE WEEK ENDING JULY 8

HIGHLIGHTS: Hot weather persisted most of the week in the Far West. A cold front interrupted summer heat over mid-America and the East but most of these areas became warm again by Sunday. Scattered thundershowers occurred over most of the South and East. Some heavy rains occurred in the southwestern deserts and in the Trans-Pecos in Texas.

PRECIPITATION: Rainfall during the first part of the week fell mostly along, and in the hot humid air in advance of a front which, at the beginning of the week, stretched from the central Great Plains to the Northeast. Daily totals exceeded 3 inches at a few stations in Texas, Oklahoma, and Arkansas on Monday, July 1. As the front advanced southward and eastward, it produced generous rains in the Gulf States on Tuesday and from southern Alabama to New England on Wednesday. Over the weekend, hot humid southeasterly winds from the Gulf of Mexico produced locally heavy rains over the southwestern deserts and a few areas along the Rio Grande. Flooding occurred in the El Paso, Texas, area. Northeastern Nebraska and spots in Iowa also received beneficial weekend rains. Wide areas in California and the Great Basin and numerous spots on the Great Plains recorded no precipitation or only light sprinkles during the week. A few spots from the Dakotas to Ohio received moderate amounts of rain from thunderstorms some of which were accompanied by damaging hail and wind.

TEMPERATURE: Temperatures over the Far West reached 90° or higher on every afternoon last week. Many stations from the southwestern deserts to the Canadian border registered 100° or higher on each afternoon from Thursday to Sunday, when reading in the desert areas of Washington soared to 106° to 110°. Mid-America enjoyed afternoon temperatures in the 70's on 1 or 2 afternoons early in the week but, by July 4, most readings were in the 80's. Weekend maximums in the Great Plains ranged from the high 80's to the middle 90's. The East, hot and humid at the beginning of the week, became comfortable by midweek. Albany, New York, registered 90° on Monday afternoon but only 75° on Thursday. Afternoon temperatures at Charlotte, North Carolina, on Tuesday and Thursday were 96° and 70°, respectively. The East warmed rapidly over the weekend when maximums reached the 80's in most areas. Temperatures averaged above normal over Washington, Oregon, Idaho, Nevada, western Montana, and northern and central California, and below normal over the rest of the Nation. Much of the central and southern Great Plains averaged 7° to 10° cooler than normal. (Summary supplied by Environmental Data Service, ESSA.)

LIGHT TRAP COLLECTIONS

[illegible]

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Revised July 12, 1968

New State Records for a Lace Bug (Dictyla echii)

E.J. Hambleton

An Old World species of lace bug, Dictyla echii (Schrank), first recorded in the Western Hemisphere in 1962 (Coop. Econ. Ins. Rpt. 12(28):778), now appears to be well established in eastern United States. Recent collecting by the writer revealed the presence of this species in considerable abundance in the tristate area of Virginia, West Virginia, and Maryland. Two males and 13 females were first collected on several scattered specimens of vipers-bugloss, Echium vulgare L. (Boraginaceae), near Purcellville, Loudoun County, Virginia, on June 5, 1966. On July 2, 1968, several hundred additional specimens were collected north of Berryville, Clarke County, Virginia; near Rippon and Harpers Ferry, Jefferson County, West Virginia; at Petersville, Frederick County, and Seneca, Montgomery County, Maryland. These collections have been deposited in the U.S. National Museum.

Determination of the species was made by Dr. Richard C. Froeschner, U.S. National Museum, Washington, D.C. Although the Drake collection contained no specimens of Dictyla echii from the United States, a single specimen was found in the National Museum collection taken at Miami, Florida, June 15, 1944, by Willis Wirth, Entomology Research Division, U.S. Department of Agriculture. Edward U. Balsbaugh, Jr., Bureau of Plant Industry, Harrisburg, Pennsylvania, had also submitted for identification four specimens collected by G.D. Sleesman: A male and female from Devonshire, Pennsylvania, July 25, 1958; one female, Clarks Valley, Pennsylvania, May 22, 1959, and one female; Harrisburg, Pennsylvania, June 17, 1959. This U.S. material, all identified by the late Carl J. Drake, came to hand too late to be recorded in "Lacebugs of the World" by Drake and F.A. Ruhoff published in 1965.

Dictyla echii, described by Schrank in 1781 as Cimex clavicornis, has been known under various names in the Old World and for over a hundred years as Monanthia echii. In 1960 Drake and Ruhoff referred it to the genus Dictyla Stal. The species is widely distributed in 43 countries of Europe, Asia, and the Middle East and North Africa. It occurs on 14 host plants, 5 of which have been naturalized in the United States from Europe. Echium vulgare, the only known host from which this lace bug has been collected in the United States, is also of European origin. Sometimes called blueweed, this biennial plant is found from June to September usually in poor soil along roadsides, in waste places, and in meadows and pastures from Maine to Virginia and west to Nebraska. It has erect growth, measures from 1 to 2½ feet in height, and bears bristly, hairy stems and leaves. The flowers, borne on spikes, are pinkish-blue to violet in color, the leaves lance-shaped and stemless.

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

All reports and inquiries pertaining to this release, including the mailing list, should be sent to:

Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
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Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

ARMYWORM requiring control in corn and small grain in west-central Minnesota. CORN EARWORM heavy and damaging in Madison County, Mississippi. CORN LEAF APHID heavy on sorghum in northeast Oklahoma and Chaves County, New Mexico; numbers significant on sorghum in Kansas and Nebraska. POTATO LEAFHOPPER increasing on legumes in Vermont and soybeans on Eastern Shore in Maryland; economic on alfalfa throughout much of Ohio. (pp. 661-662).

EUROPEAN CORN BORER infestations worst in 20 years in central and western Virginia. (p. 663). SOUTHWESTERN CORN BORER infestation probably highest ever in extreme southern Illinois. WESTERN CORN ROOTWORM damage severe on corn in some areas of Texas County, Oklahoma. NORTHERN CORN ROOTWORM damage severe in untreated corn in Wisconsin. (pp. 664-665).

PEA APHID heavy in alfalfa seed fields in Humboldt County, Nevada, and in second-crop alfalfa in McKenzie County, North Dakota. LYGUS BUGS increasing in alfalfa in Arkansas Valley of Colorado. (p. 667).

LESSER CORNSTALK BORER destroyed young soybean stand in Covington County, Alabama. (p. 668).

BOLL WEEVIL controls general on cotton throughout central and southern Alabama. BOLLWORMS heavy in numerous fields in same area. (pp. 668-669).

PALE-STRIPED FLEA BEETLE damaging beans in Cheyenne and Sedgwick Counties, Colorado, and Converse County, Wyoming. (p. 672).

ORIENTAL FRUIT MOTH caused much damage to peach in Nacogdoches County, Texas. APPLE MAGGOT emergence increased greatly at Storrs, Connecticut. (p. 673).

JACK-PINE BUDWORM caused severe browning on 5,000-10,000 acres in Juneau County, Wisconsin. (p. 676).

MOSQUITOES heavy and annoying in Wisconsin and Michigan; heaviest in several years in Maine. (p. 677). FACE FLY increased rapidly on cattle in Indiana; annoyance severe in St. Croix County, Wisconsin. (p. 678).

WHITE-FRINGED BEETLES damaging soybeans in Monroe County, Alabama, and Union County, North Carolina; reported for first time in Missouri. (p. 680).

Detection

New State records include LETTUCE ROOT APHID in North Carolina (p. 676) and a WHITE-FRINGED BEETLE in Missouri. (p. 680).

For new county records see page 682.

Special Report

The Spotted Mediterranean Cockroach in the United States. (pp. 684-686).

Reports in this issue are for week ending July 12 unless otherwise indicated.

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WEATHER BUREAU'S 30-DAY OUTLOOK

MID-JULY TO MID-AUGUST 1968

The Weather Bureau's 30-day outlook is for temperatures to average above seasonal normals in the Northeast as well as over most of the northern and central Plains and the Great Basin. Below normal temperatures are indicated for the north Pacific coast and also for the southern Plateau, the southern Plains, and the west gulf coast region. Elsewhere near normal temperatures are in prospect. Precipitation is expected to exceed normal in the North and South Atlantic Coast States, the north Pacific coast, and from the southern Plateau eastward to the west gulf coast region. Subnormal precipitation is indicated for the Middle Atlantic Coast States, central portions of the Appalachians, and the northern Plains, while little or no rainfall is expected over California. In unspecified areas near normal rainfall is anticipated.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D. C. 20250. Price \$5.00 a year.

WEATHER OF THE WEEK ENDING JULY 15

HIGHLIGHTS: Typical July weather prevailed over most of the Nation - hot humid with spotty afternoon and evening thundershowers, mostly light to moderate, a few very heavy.

PRECIPITATION: Showers and thunderstorms occurred along the leading edge of a cold front that, early in the week, extended from Missouri to New England and in the hot humid air south of the front. Heavy rains fell in the first half of the week over parts of the South Atlantic and Gulf States. Showers in eastern Mississippi began on Monday and by 7 a.m. Tuesday, 15.68 inches had fallen at Columbus. Generous thundershowers occurred over the Great Lakes region, the Ohio River Valley, and in parts of the Northeast on Tuesday and Wednesday. A severe thunderstorm at Auburn, New York, on Tuesday evening was accompanied by strong winds which blew down a circus tent injuring many persons. The thunderstorms in the Carolinas and Virginia increased in intensity from Tuesday to Thursday but were generally lighter over the weekend. Numerous drought relieving showers in Florida, some locally heavy, became lighter during the latter half of the week. Weather of the Week continued on page 682.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (*Pseudaletia unipuncta*) - MINNESOTA - Ranged 4-12 per square yard on barley, wheat, and corn in Chippewa, Swift, and Stevens Counties; mostly early instars with few nearly full-grown larvae in some fields. Controls started in some areas and expected to increase. Found occasionally on small grain and corn in other districts. (Minn. Ins. Rpt.). WISCONSIN - Averaged 1 larva per 30 row feet of oats in Rock and Dane Counties; damage light to some corn. (Wis. Ins. Sur.). ILLINOIS - Evident in grassy cornfields in northern half of State. (Ins. Sur. Bull.). MICHIGAN - Problems light to light-moderate in 6 wheatfields. Mostly third instars ranged 7-38 per 25 row feet. (Newman, July 8). MARYLAND - Adults averaged 12 per night June 25-July 1 and 4 per night July 1-8 at Centreville, Queen Annes County. Larvae infested 1 percent of 100-acre cornfield near Crumpton. (U. Md., Ent. Dept.). MAINE - Remains low despite large numbers of adults active in early season as indicated in blacklight traps at Monmouth. Only one report to date of larvae damaging hay. (Boulanger, July 5).

ASTER LEAFHOPPER (*Macrosteles fascifrons*) - NORTH DAKOTA - Ranged 12-80 (average 30) per 100 sweeps in flax fields in Traill and Grand Forks Counties. (Brandvik). MICHIGAN - Still problem in State. (Bath, July 8).

BET LEAFHOPPER (*Circulifer tenellus*) - ARIZONA - Averaged 20 per 100 sweeps on sugarbeets in Cochise, Cochise County. (Ariz. Coop. Sur.).

CORN EARWORM (*Heliothis zea*) - NEW YORK - Adult emergence begun July 3 from pupae in laboratory; undetected in fields in Hudson Valley. (N.Y. Wkly. Rpt.). ARKANSAS - Eggs averaged 2 per corn silk in Jefferson County. (Boyer). MISSISSIPPI - Heavy in Madison County; damage moderate to heavy to developing ears. (Dinkins). TEXAS - Light in all cornfields examined in Limestone, Bell, Falls, Milam, and Robertson Counties. (Green). OKLAHOMA - Larvae infested 15 percent of field of sweet corn in Jefferson County. Ranged 0-3 per ear on 24 ears of sweet corn in Mayes County; all ears damaged. (Okla. Coop. Sur.). KANSAS - Infestation averaged 4-10 percent on Brown and Doniphan County corn; mostly late instars feeding in whorls in all cases. (Simpson). NEBRASKA - Second to fifth instars light, about 1 per 100 sweeps, in 2 alfalfa fields in Lancaster County. Mostly fifth instars in about 5 percent of corn plants in field near Auburn, Nemaha County. (Keith, Roselle). CALIFORNIA - Larvae medium on corn plantings in Corning, Tehama County. (Cal. Coop. Rpt.).

CORN LEAF APHID (*Rhopalosiphum maidis*) - MARYLAND - Light on Eastern Shore. Heaviest to date on 5 percent of 55-acre stand near Roseville, Queen Annes County. (U. Md., Ent. Dept.). VIRGINIA - Infested 20 percent of tassels in 10-acre cornfield in Appomattox County. Aphids ranged 4-100 per infested tassel. (Allen). ALABAMA - Medium to heavy in most corn examined in Lawrence, Blount, and other northern counties. One field in Madison County cut due to heavy damage from probably maize dwarf mosaic disease. *R. maidis* may be vector of this disease. (Magnusson et al.). ARKANSAS - Present on sorghum in White County. (Barnes). INDIANA - Nymphs and apterae 5-25 per plant on 60 percent of tassel-in-whorl and tasseling corn in south-central district; colonies of 100 per plant on less than 1 percent of corn. Southeast district corn very late; aphids mostly on Johnson grass in area. Alates and nymphs 1-50 (average 8) per plant on 30-50 percent of corn 42+ inches high in central districts; heaviest in east-central district. (Huber). Colonies of 25-100 wingless forms per plant on 2 percent of early corn in Wanatah area. (Matthew). ILLINOIS - Increasing; heavy on few plants in some cornfields in southwestern area. Alates and apterae found on grasses and in whorls of corn. (Ins. Sur. Bull.). Occasionally whorls of corn completely covered. (Ill. Ins. Rpt.). WISCONSIN - Colonies forming in whorls of corn; incidence appears higher than normal in fields examined. *Orius insidiosus* common predator in most fields; may control populations. (Wis. Ins. Sur.). NEBRASKA - Infested about 2 percent of plants in 16 Dawson County cornfields; numbers light with no colonies established. (Pruess). Ranged 0-1,000 (average 600) per sorghum plant in fields near Auburn, Nemaha County. (Roselle). Ranged 25-1,200 (averaged 350) per sorghum plant in 5 fields checked in Seward

and Saline Counties; 85-98 percent of plants infested. (Keith). Heavy in scattered fields in Franklin County. (Congrove). KANSAS - Numbers variable; ranged from 5-10 to 1,500+ per plant in Riley, Pottawatomie, Jackson, Doniphan, Brown, Nemaha, and Marshall Counties. Heavier in sorghum than in corn. (Simpson). MISSOURI - Light to moderate in whorls of grain sorghum throughout west-central area; some controls applied. (Munson). OKLAHOMA - Continues heavy in grain sorghum in northeast areas. (Okla. Coop. Sur.). TEXAS - Light in sorghum heads in field near Lott, Falls County. (Green). NEW MEXICO - Heavy in sorghum checked in Chaves County. (Eubank, Dickerson).

GREENBUG (*Schizaphis graminum*) - NEBRASKA - Remains active on sorghum in east and southeast areas. Aphids ranged 50-100 per leaf in 24-inch sorghum in Nemaha County. (Roselle). Ranged 0-75 (average 20) per plant on about 45 percent of sorghum plants in 5 fields in Seward and Saline Counties. (Keith).

PAINTED LADY (*Vanessa cardui*) - NORTH DAKOTA - Larvae ranged up to 20 (average 8) per 100 sunflower plants in Grand Forks and Traill Counties. (Brandvik).

PICKLEWORM (*Diaphania nitidalis*) - GEORGIA - Moderate on squash in Tift County. (French, July 6).

POTATO LEAFHOPPER (*Empoasca fabae*) - VERMONT - Increasing rapidly on legumes. (MacCollom). MARYLAND - No buildup to date on alfalfa in central area. Increasing in alfalfa on Eastern Shore. Ranged 5-15 per sweep in Queen Annes County alfalfa. Light, increase begun on Eastern Shore soybeans. (U. Md., Ent. Dept.). VIRGINIA - Light, some yellowing of peanut foliage. (Smith). OHIO - Economic on alfalfa through much of State. Ranged 5-19 (average 11) per sweep in fields in Madison, Highland, Clinton, Franklin, Logan, and Union Counties. Yellowing beginning to appear in majority of fields sampled. (Rose). Increased rapidly in Wayne, Medina, and Ashland Counties. Mostly 1-2 per sweep, but 5+ and up to 15 per sweep reported. Some yellowing. (Glass, Thoburn). Counts of 10 per sweep June 24 on Sandusky County alfalfa. (Maddy). Counts of 1.5 per sweep damaged 50 percent of leaves in Wood County. (Nicholson). INDIANA - Second cutting of alfalfa 20 percent complete July 5. Adults 1-14 per sweep on second-growth alfalfa in southern and central districts. Damage likely on third-growth alfalfa this season. (Huber). WISCONSIN - Relatively high numbers appearing on alfalfa, beans, and potatoes. Up to 11 per sweep in some alfalfa; 50 percent nymphs; generally averaged 1 per sweep. Numerous on snap beans in Waushara County; few adults on lima beans in Rock County but counts lower than on other crops. (Wis. Ins. Sur.). MINNESOTA - Heavy only in some central counties. Ranged 100-200 per 100 sweeps in alfalfa in Carver, McLeod, and Wright Counties; 5-10 per plant on potatoes in Sherburne County. No "hopperburn" noted. (Minn. Ins. Rpt., July 8).

POTATO PSYLLID (*Paratrioza cockerelli*) - COLORADO - Adults economic. 2-4 per 100 sweeps, in potatoes in Alamosa, Conejos, Rio Grande, and Saguache Counties. (Hansen et al.). Undetected in potato fields checked in Otero, Bent, and Prowers Counties. Adults ranged 0-50 per 100 sweeps on matrimony vine; no nymphs or eggs found. (Schweissing).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - NEBRASKA - Light. 0-5 per 10 sweeps, on alfalfa in Lancaster, Saline, and Seward Counties. (Keith). KANSAS - Light. 5-15 per 10 sweeps, in all alfalfa checked in northeast district. (Simpson). ARKANSAS - Collected at rate of 500 per 100 sweeps in Faulkner County alfalfa. Has been absent to very low this season. May increase due to dry weather. (Boyer).

TOBACCO HORNWORM (*Manduca sexta*) - MARYLAND - Remains light. Late instars ranged 1-6 per 50 plants in Calvert County. (U. Md., Ent. Dept.).

TOMATO HORNWORM (*Manduca quinquemaculata*) - MICHIGAN - First specimens (5 adults) collected at Berrien County blacklight station July 1 and 2; one female taken. Egg laying should begin now and larval damage can be expected next 14-21 days, especially in southern tier of counties. (Janes). ILLINOIS - Common on

tomatoes in southern half of State. (Ins. Sur. Bull.). COLORADO - Light on tomatoes in Fowler, Otero County, and Vineland, Pueblo County, areas of Arkansas Valley. (Schweissing).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NEW YORK - Hatch continues on early whorl to mid-silk corn in Hudson Valley. Total of 5 first, 10 second, and 6 third instars collected from 2 plants in recently treated planting July 1. Infestation general in about half of plants examined in recently treated green-tassel stage variety July 3; ranged from first instars in leaf sheaths to occasional fifth instars in stalks and forming ears. Total of 26 larvae dissected from 1 plant from treated planting at Fishkill, Dutchess County, July 5. Plant infestation 75 percent in untreated early whorl plants; controls in progress. Fresh egg mass found and occasional moths still active. Some males trapped nearly every night at Poughkeepsie and Hurley. Most larvae survived treatments inside plants, only occasional larvae found dead. Two earliest-sown varieties in mid-silk stage by first week of July. Worst infestation in years due partly to prolonged hatch during the month of June. Activity continues heavy in Monroe County. (N.Y. Wkly. Rpt.). NEW JERSEY - Second and third instars infested 50 percent of sweet corn tassels near Trenton. (Ins.-Dis. Newsltr.). MARYLAND - Adults averaged 6 per night at Centreville, Queen Annes County. Larval infestations ranged 20-85 percent in central area and 7-60 percent on Upper Shore area. Larvae infested 5 percent of sweet corn ears near Preston, Caroline County. (U. Md., Ent. Dept.). DELAWARE - Adults averaged 2-3 per night in blacklight trap collections in Sussex County. (Burbutis). VIRGINIA - First-generation larvae infesting 80 percent of 10-acre cornfield in Appomattox County. Infestation 25-85 percent in many fields in Pittsylvania, Halifax, Buckingham, Hanover, Appomattox, Russell, Fluvanna, and Franklin Counties. Larvae generally not as widespread or as severe in Giles, Bland, and Wythe Counties. Worst year for this species in past 20 years, according to one observer. (Allen). ALABAMA - First-generation larval damage serious in several localized cornfields in tassel stage in Blount and Madison Counties; 1-5 pupae common, numerous moths in flight, and egg laying underway. (Conway et al.). INDIANA - First-generation infestations. 10-100 (average 20) percent in south-central district; earliest fields (1-5 percent of total) most heavily infested; fourth instars predominant. Infestations ranged 2-24 percent in southeast district; 10 percent of corn 24 inches or taller. Very light with leaf and whorl feeding on 2-32 (average 6-8) percent of corn in central districts; ranged second to late fourth instar. (Huber). MICHIGAN - Moderate in cornfields in 7 counties; 5-50 percent of knee-high plants infested. Total of 60 percent of larvae second instars and 40 percent first instars. Egg laying greatly decreased, but will continue another 10-14 days. This will lengthen second-brood activity and its associated problems. (Newman, July 8).

ILLINOIS - Infested plants ranged 0-10 (average 2.2) per 100 plants in southeast district and 0-6 (average 1.0) in southwest district; pupation almost 100 percent. Infested plants ranged 28-88 per 100 plants in west-southwest and east-southwest districts; pupation of first generation ranged 10-40 percent. (Ill. Ins. Rpt.). First-generation pupation begun in southern half of State. Pupation almost complete in southernmost counties; moth emergence begun. Pupation ranged 10-40 percent in field corn in south-central area; moth emergence will begin in late July. First-generation larvae ranged 25-90 per 100 plants in most mature fields in area between U.S. Highways 40 and 50. (Ins. Sur. Bull.). WISCONSIN - Mostly third and fourth instars; some tassel tunneling underway; many tunneling in midribs. Populations generally low, but controls applied to some canning corn. (Wis. Ins. Sur.). MINNESOTA - Egg masses generally light in third of cornfields in southwest, south-central, and west-central districts July 2-8; 8 egg masses per 100 plants highest count. Hatch light in all districts, but should increase this week. Most egg laying on corn 24+ inches high. Egg masses and larvae very difficult to find in southeast and central districts. Moth emergence and egg laying currently continue; counts in all districts low. Heaviest

infestations so far have been 16 infested plants per 100; first instars 1-6 per plant. Egg laying and hatch expected to increase next period. (Minn. Ins. Rpt.). NEBRASKA - First-brood damage evident on one percent of corn plants in 16 fields checked in Dawson County. (Pruess). Less than one percent of plants infested in fields checked in Knox, Seward, and Saline Counties. (Keith). KANSAS - Second to fourth instars 1-3 per plant on 3-8 percent of corn in Brown, Doniphan, and Pottawatomie Counties. (Simpson).

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - ILLINOIS - Infested plants ranged 0-52 (average 14) per 1,000 plants in southeast district and 0-52 (average 10) in southwest district. (Ill. Ins. Rpt.). First-generation larvae 10-30 per 1,000 cornstalks in 4 southernmost counties; infestation probably highest ever in State. First-generation pupation begun. Some moth emergence expected within next week. (Ins. Sur. Bull.). ALABAMA - First-generation larvae pupated in some fields in Lawrence, Blount, and other northern counties. Flights heavy in 10-acre field in Lawrence County; first-generation larval damage serious on 25-50 percent of stalks. Some late-developing larvae still feeding. (McClendon et al.).

BLACK CUTWORM (*Agrotis ipsilon*) - ILLINOIS - Hollowed out 10 percent of plants below ground level in cornfield in south-central area. (Ins. Sur. Bull.). WISCONSIN - Cut off 5 percent of corn in field in western Walworth County; all larvae pupated by July 9. Field in corn in 1967. (Wis. Ins. Sur.). OREGON - Spotty in corn at Eugene, Lane County, and Corvallis, Benton County. Pupating. (Crowell).

STALK BORER (*Papaipema nebris*) - ILLINOIS - Causing concern in corn border rows; should disappear soon. (Ins. Sur. Bull.). WISCONSIN - Damage noticeable in margins of corn in Rock and Dane Counties. (Wis. Ins. Sur.). NEBRASKA - Damaged border rows of cornfield near Concord, Dixon County. (Hill).

SORGHUM WEBWORM (*Celama sorghiella*) - TEXAS - Heavy, 2-3 per head, in sorghum field northeast of Groesbeck, Limestone County. Light in fields examined in McLennan, Bell, Falls, Milam, and Robertson Counties. (Green).

CORN ROOTWORMS (*Diabrotica* spp.) - ILLINOIS - *D. longicornis* and *D. virgifera* developing as expected. Pupation begun in northern area; eggs still hatching and young larvae still found. Damage to roots evident in many cornfields and will become progressively worse during July. (Ins. Sur. Bull.). MINNESOTA - Egg hatch slowly progressing July 2-8. Larvae very light; 8 per plant in Wright County highest count. Mostly first instars with few second instars in some fields. Currently still hatching in southern half of State. Development spread out; larvae mostly first but second and third instars found in many fields. Few prepupae in southwest district. Larval counts varied in southeast district. Counts generally low, 0-4 per plant, where corn followed corn in southwest district. Larvae, 0-25 per plant, damaged trace to 75 percent of roots in southeast district. Larvae, 0-15 per plant, damaged (generally low) trace to 10 percent of roots in central district. Infested several fields in Stevens, Swift, and Chippewa Counties (south-central); first instars averaged about 1 per plant. (Minn. Ins. Rpt.). SOUTH DAKOTA - Third and last instars in northern Yankton County; high counts of 67 larvae per plant in untreated field. No pupae noted. Larval development less advanced in cornfields in northern Clay County; mostly second instars. (Jones, Kantack). NEBRASKA - *D. virgifera* and *D. longicornis* damage ranged little to none in most treated fields in Dawson County. Second and third instars up to 20 per plant in one field. No adults observed. (Pruess). One *D. virgifera* adult observed in field near North Platte, Lincoln County. (Hill, Short). *D. virgifera* adults averaged 3.5 per 10 plants in field near Auburn, Nemaha County. (Roselle). Larvae 25-30 per plant in untreated check row in cornfield at experiment station in Dixon County; pupation about 10 percent. No adults observed. (Hill).

WESTERN CORN ROOTWORM (*Diabrotica virgifera*) - MISSOURI - Adults heavy, 30+ per plant, throughout cornfield in Bates County. Dead and lodged plants resulted from larval feeding earlier. This is most southern economic infestation observed in State. Adults collected in Vernon, Cedar, and Hickory Counties for new county

records. (Munson). KANSAS - Adults 1-2 per plant in most cornfields checked in Brown and Doniphan Counties; 3-7 per plant in Brown County field. (Simpson). OKLAHOMA - Ranged 2-45 per corn plant on 3,800 acres of corn in Texas County; mostly late instars with few pupae and adults. Damage severe where higher counts found. This land treated at planting time. (Okla. Coop. Sur.). COLORADO - Adults and larvae noted on corn in Kit Carson County. (Croissant). WYOMING - Up to full-grown larvae averaged 3 per plant in cornfield near Torrington, Goshen County. (Jones).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - WISCONSIN - Root damage severe in untreated fields. Larval size variable but large percentage nearly full grown. Tunneling within larger corn roots prevalent. Larvae averaged 17 per plant in Columbia and Grant Counties; ranged 0.33-12 per plant where present in plots sampled weekly in Rock and Walworth Counties. (Wis. Ins. Sur.). INDIANA - First adults of season on corn July 8 in Jackson County. (Huber). Pupation first observed July 9 at Lafayette. (Gould).

SOUTHERN CORN ROOTWORM (*Diabrotica undecimpunctata howardi*) - ILLINOIS - Larvae, pupae, and adults present in some cornfields in southern half of State; larvae tunneled into stalks in some late fields, killing heart of plant. (Ins. Sur. Bull.). ARIZONA - Adults, probably this subspecies, averaged 40 per 100 sweeps in 40-acre sorghum field at Cochise, Cochise County. (Ariz. Coop. Sur.).

CORN FLEA BEETLE (*Chaetocnema pulicaria*) - MARYLAND - Adults still active on late-planted corn in Frederick County; 50 percent of one corn stand damaged near Ceresville, Frederick County. (U. Md., Ent. Dept.).

FALSE CHINCH BUG (*Nysius ericae*) - TEXAS - Medium to heavy on grain sorghum in Kinney County; some damage. (Neeb).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Averaged 10 per 100 sweeps in sorghum in Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

SORGHUM MIDGE (*Contarinia sorghicola*) - TEXAS - Spotted with damage to late-planted grain sorghum in Fayette, Washington, and Burleson Counties July 3. Light in McLennan, Falls, and Bell Counties. Medium to heavy in Kinney County; controls in progress. Averaged 4, 1, 3, and 6 per 25 heads in Johnson grass in Lubbock, Lynn, Terry, and Garza Counties. (Neeb et al.).

SLUGS - VERMONT - Damaged corn in several areas; favored by wet weather. (MacCollom). NEW YORK - Serious damage on Yates County field corn due to prolonged wet weather. Some cornfields heavily damaged in Monroe County; some controls applied. (N.Y. Wkly. Rpt., July 8). MICHIGAN - Numerous reports of damage, especially to corn and field beans; much damage probably done during rainy period. (Janes, July 8).

SMALL GRAINS

WHEAT STEM MAGGOT (*Meromyza americana*) - MINNESOTA - White heads of wheat, oats, and barley very common throughout State. Infestations 2-5 percent (highest counts) in central and west-central districts and 0-1 percent in southwest, south-central, and southeast districts. (Minn. Ins. Rpt., July 8).

TURF, PASTURES, RANGELAND

FALSE CHINCH BUG (*Nysius ericae*) - COLORADO - Numerous in all areas of Mesa County, especially around grasses in pastures and occasionally around gardens. Mostly nuisance; controls applied in some areas. (Bulla)

A PLANT BUG (*Trigonotylus ruficornis*) - MISSOURI - Mostly nymphs heavy, 100-420 per 10 sweeps, in redtop in southwest area. (Munson).

A HESPERIID MOTH (Atalopedes campestris) - TEXAS - Heavy, damaging grass in Caldwell and De Witt Counties. (Lindsey, Heideman).

A SNAIL (Zonitoides arboreus) - CALIFORNIA - Heavy on dichondra lawns in Sun City, Riverside County. (Cal. Coop. Rpt.).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - MAINE - Pupating in southern areas. Larvae per plant quite low; most in late instars. Cutting well underway although delayed due to wet conditions earlier in season. (Boulanger, July 5). VERMONT - Problems appear over for 1968 season. (MacCollom). NEW YORK - Spring infestation decreasing in State; control difficult due to unfavorable weather delaying harvest of first crop. Most first-crop alfalfa now cut. Some small larvae found in 6-inch regrowth in Ithaca area, probably from late eggs laid with advent of warm weather. (N.Y. Wkly. Rpt., July 8). MARYLAND - Larvae and adults decreased on alfalfa throughout State. (U. Md., Ent. Dept.). WEST VIRGINIA - Many pupae observed in field. Full-scale emergence yet to occur in northern part of State. (Dorsey, July 3). OHIO - Larvae 1-9 (average 6) per sweep despite rapid declines in Madison, Highland, Clinton, Franklin, Logan, and Union Counties; feeding damage in fields with larger populations. (Rose). Current populations and damage in Wayne, Medina, and Ashland Counties continue to vary with effectiveness of controls; most reports indicate larvae decreasing, few reports of many larvae and much damage. Adults dispersing. (Glass, Thoburn). INDIANA - Larvae ranged from 2 per 5 sweeps to 5 per sweep on second-growth alfalfa in southern and central districts. (Huber). MICHIGAN - Counts minimal in Ottawa, Kent, Ionia, and Clinton Counties. Populations 70-75 percent in cocoon and pupal stage and 25-30 percent second and third instars in 7-county survey; 70 percent of adults newly emerged. Population and adult emergence will continue next 3-4 weeks. (Newman, July 8). MISSOURI - Collected in Polk County for new county record. (Munson). NEBRASKA - Larvae 60 per 100 sweeps in alfalfa field near Gothenburg, Dawson County. (Stevens). NORTH DAKOTA - Larvae up to 850 (average 150) per 100 sweeps in second-crop irrigated alfalfa; adults 1 per 100 sweeps. Tip damage 50 percent in more heavily infested fields. Pupation and light emergence occurred. (Kaatz). WYOMING - Average per 100 sweeps by county: Sweetwater - 33 larvae and no adults; Sublette - 150 larvae and 8 adults; Lincoln - 380 larvae and 41 adults; Uinta - 550 larvae and 24 adults; and Teton - 730 larvae and 57 adults. Teneral adults and pupae present. First cutting about 25 percent complete. (Parshall). OREGON - Larvae, mostly second instar up, 19-20 (averaged 2.4) per sweep in 10 samples (10 sweeps each) July 9 in mature, untreated, very weedy alfalfa field near Canby, Clackamas County. Two old adults taken. Leaf damage 10-20 percent in 90+ percent of plants. (Westcott). WASHINGTON - Light to moderate infestation increased from 1 square mile to 32 square miles near Ellensburg, Kittitas County, July 5. (Klostermeyer). Found at Adna, Lewis County. (Minnick, Pennell, July 5).

CLOVER HEAD WEEVIL (Hypera meles) - MISSOURI - Collected from red clover in Montgomery County by L. R. Hanning for new county record. (Munson).

CLOVER SEED WEEVIL (Miccotrogus picrostris) - OREGON - Adults heavy in white and red clover along a roadside 2.5 miles west of Remote, Coos County. Collected 24 from 10 white clover heads July 1. This is a new county record. (Westcott). MISSOURI - Collected in Ralls and Montgomery Counties by L.R. Hanning for new county records. (Munson).

SPOTTED BLISTER BEETLE (Epicauta maculata) - COLORADO - Adults 150-200 per 100 sweeps in alfalfa in Cheyenne Wells area, Cheyenne County. (Johnson).

PALE-STRIPED FLEA BEETLE (*Systema blanda*) - COLORADO - Adults 50 per 100 sweeps in alfalfa in Hoyt area, Adams County. (Johnson).

PEA APHID (*Acyrtosiphon pisum*) - NEVADA - Heavy in alfalfa seed fields at Orovada, Humboldt County, where no treatments applied for about 3 weeks and where treated during recent unfavorable weather. (Hilbig, Lundahl). Increasing, 50-100 per sweep, on alfalfa hay in Mason and Smith Valleys, Lyon County. (Heringer). Averaged 50 per sweep in Junco, Humboldt County, alfalfa seed fields. (Hilbig). WYOMING - Ranged 25-1,100 per 100 sweeps in State. Adult and nympha average per 100 sweeps by county: Sweetwater 700; Teton 300; Uinta 150; Lincoln 110; and Sublette 80. (Parshall). COLORADO - Light in most areas; 0-2,300 (average less than 500) per 100 sweeps in alfalfa in southeastern area. (Schweissing). NORTH DAKOTA - Continues high, 50-1,000 (average 530) per 100 sweeps, in second-crop irrigated alfalfa in McKenzie County. Lady beetle larvae up to 150 (average 40) per 100 sweeps in same fields. (Kaatz).

AN APHID (*Aphis cracciae*) - MAINE - Infestations spotty on vetch in Orono area, Penobscot County, July 1. Heavy on infested plants; winged forms and nymphs with wing pads abundant; indicates more general infestation likely. Colonies examined free of parasites. (Boulanger).

MEADOW SPITTLEBUG (*Philaenus spumarius*) - VIRGINIA - Adults 10-30 per 100 sweeps in red clover in Appomattox, Buckingham, Fluvanna, Albemarle, and Pittsylvania Counties. Appomattox and Buckingham Counties are new county records. (Allen). MISSOURI - Collected by L.R. Hanning in Monroe and Pike Counties for new county records. (Munson).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Average per 100 sweeps in alfalfa by county: Yuma 400; Graham 50; Cochise 40; Pinal and Maricopa 20. (Ariz. Coop. Sur.).

TARNISHED PLANT BUG (*Lygus lineolaris*) - INDIANA - Nymphs ranged from 3 per 5 sweeps to 3 per sweep on second-growth alfalfa in southern and central districts. (Huber). OHIO - Much increase past 2 periods. Ranged from less than one to 4+ (average 2+) per sweep in Pickaway, Ross, Licking, Madison, Highland, Clinton, Franklin, Logan, and Union Counties. (Rose). VIRGINIA - Adults 20-50 per 100 sweeps in red clover in Appomattox, Buckingham, and Giles Counties. (Allen). DELAWARE - Adults and nymphs 20-30 per 10 sweeps on alfalfa throughout State. (Burbutis).

LYGUS BUGS (*Lygus* spp.) - KANSAS - Averaged 25-40 per 10 sweeps on northeast area alfalfa and red clover. (Simpson). WYOMING - Adults and nymphs light in western area alfalfa; ranged 16-110 (average 49) per 100 sweeps on alfalfa in Uinta, Lincoln, Teton, Sublette, and Sweetwater Counties. (Parshall). COLORADO - Increased to 50-1,100 per 100 sweeps in alfalfa in Arkansas Valley. (Schweissing). ARIZONA - Counts per 100 sweeps ranged 80-200 in alfalfa in Cochise County and 100-150 in Graham County. (Ariz. Coop. Sur.). NEVADA - Reinfested previously treated alfalfa seed fields at Junco, Humboldt County; adults and mostly first instars averaged 5 per sweep. (Hilbig).

PLANT BUGS (*Adelphocoris* spp.) - NEBRASKA - Ranged 10-35 (average 12) per 10 sweeps on alfalfa in Lancaster, Seward, and Saline Counties. (Keith). KANSAS - *A. lineolatus* averaged 45-60 per 10 sweeps in alfalfa seed field in Brown County. (Simpson).

A FLEAHOPPER (*Spanogonicus albofasciatus*) - ARIZONA - Averaged 60 per 100 sweeps in alfalfa in San Simon area, Cochise County. (Ariz. Coop. Sur.).

ALFALFA CATERPILLAR (*Colias eurytheme*) - MICHIGAN - Last instars pupating in alfalfa; adults increasing with favorable temperatures. Egg laying begun and will continue next 2-3 weeks. (Janes, July 8). NEBRASKA - Averaged about 6 per 10 sweeps on fields checked in Lancaster County. (Keith). COLORADO - Larvae light in alfalfa throughout Arkansas Valley. (Schweissing).

GREEN CLOVERWORM (*Plathypena scabra*) - NEBRASKA - Larvae per 10 sweeps averaged 8 on alfalfa in Lancaster County and ranged 0-3 in Seward and Saline Counties. (Keith). KANSAS - Ranged 5-15 per 10 sweeps on northeast area alfalfa. (Simpson).

VARIEGATED CUTWORM (*Peridroma saucia*) - NEBRASKA - Second to fourth instars light, less than 1 per 10 sweeps, on alfalfa in Lancaster County. (Keith).

WESTERN FLOWER THRIPS (*Frankliniella occidentalis*) - ARIZONA - Averaged 600 per 100 sweeps in 40-acre field at San Simon, Cochise County. (Ariz. Coop. Sur.).

SPIDER MITES (*Tetranychus* spp.) - ARIZONA - Heavy in several alfalfa seed fields at Yuma, Yuma County; treatments applied. (McHenry). NEVADA - *Tetranychus* sp. heavy in dry areas of alfalfa seed fields at Orovala, Humboldt County. Leaf damage easily seen. Treatments applied. (Lundahl).

SOYBEANS

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - ALABAMA - Some controls applied to fields where damage extreme in Madison County. This unusual for northern area, due to heavy overwintering of adults from 1967. Light in Talladega County. (Magnusson et al.). TENNESSEE - Damage only light in most central area fields. (Quillin). VIRGINIA - Adults rare; late instars about ready to pupate in Nansemond County. (Smith). MARYLAND - Larvae and adults still active on soybeans throughout State; damage generally light. (U. Md., Ent. Dept.).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - MARYLAND - Remains light on Eastern Shore; light to medium in southern area. Defoliation 15 percent in 15-acre field in Patuxent, Charles County; adults 2-4 per 3 row feet. (U. Md., Ent. Dept.). ILLINOIS - Noneconomic in southern area. (Ins. Sur. Bull.). MINNESOTA - Light margin feeding in Scott, Sibley, Brown, and McLeod Counties. (Minn. Ins. Rpt.).

ALFALFA WEEVIL (*Hypera postica*) - OHIO - Adults destroyed one acre of soybeans in Delaware County and infested soybeans in Marion County. (Jones).

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - ALABAMA - Larvae heavy, destroyed stand in 100-acre field of young soybeans at Opp, Covington County. Soil treatment to be applied and area replanted. Stands destroyed 2 and 3 times in several fields near St. Elmo, Mobile County. (Pike et al.).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ALABAMA - Previous girdling caused some plants to fall in most fields in State. (McQueen).

COTTON

BOLL WEEVIL (*Anthonomus grandis*) - SOUTH CAROLINA - Some first-generation weevils noted at Florence. Generally light for time of year; heavy in some untreated fields. Adults 0-1.5 per 100 squares in treated plots; none in untreated plots. Total of 12 adults on 9 groups of 10 potted plants; total to date 33. Two adults taken in male attractant traps; total to date 2,804. Percent larval infestations ranged 0.1-6.1 in treated plots and 0-2.5 in untreated plots. (Taft et al., July 5). GEORGIA - Percent punctured squares 0, 2, and 4 in 3 Colquitt County fields; 0, 1, and 2 in 3 Turner County fields; 3 and 4 in 2 Worth County fields; 0, 6, and 8 in 3 Tift County fields. (Womack, July 6). ALABAMA - Continues high throughout southern and central areas; controls general. Punctured squares gradually increased in northern area, but much lighter than 1967. Punctured squares up to 45 percent in some isolated fields, mostly 2-15 percent. Controls begun in some fields in northern area. (McQueen). MISSISSIPPI - Punctured squares averaged 2-3 percent in fields checked in Yazoo County week ending July 5; newly emerged first-generation weevil observed. General emergence expected. Remained light throughout State week ending July 12. Numbers higher

in hill section than in delta area. First-generation emergence continues in south delta region; several fields treated. Average percent infestation by county: Pike, 15 in 10 fields; Hinds, 4 in 7; Issaquena, 1 in 30; Washington, 5 in 6; Attala, 5 in 15; Chickasaw, 10 in 8; Sharkey, 1 in 40; Holmes, 8 in 10; Jefferson Davis, 6 in 75; Yazoo 4 in 15 fields. (Dinkins). Punctured squares in 7 of 22 fields in delta counties; percent infestation averaged 2.6 (maximum 14.0) in these 7 fields. (Pfrimmer et al.). LOUISIANA - Square infestations ranged 1-18 percent (average 7.6) in 131 of 135 fields checked in Madison Parish week ending July 4. No weevils found in 59 fields checked by row-foot method. Nine weevils collected in 36 sex attractant cage traps and 8 in 10 winged traps. One weevil collected from 100 potted cotton plants. Total of 2,487 to date. Percent square infestations in 112 fields in Madison Parish averaged 6.1 and ranged 2.0-24.0 week ending July 11. One weevil found in 27 young fields checked by row-foot method. Recovered 7 weevils from caged traps, 6 from winged traps, and 4 from 100 potted plants in male attractant test. (Cleveland et al.). ARKANSAS - Infested 1,213 (18.7 percent) of fields scouted. Above treatment level in 15 fields. (Boyer et al.). TEXAS - Infestation increased over that of previous period in McLennan and Falls Counties. Percent punctured squares 0.5-9.7 (average 4) in 14 treated fields and 0.9-20.8 (average 12.9) in 17 untreated fields. No weevils taken in male attractant traps. (Cowan et al.). For Boll Weevil in High Plains see page 679. OKLAHOMA - Remains light over southwest growing area. Larvae less than 1 percent in cotton in Jackson County. (Okla. Coop. Sur.).

BOLLWORMS (*Heliothis* spp.) - SOUTH CAROLINA - Percent larval infestations ranged 0-0.75 in treated plots and 0-1.0 in untreated plots at Florence. No *H. virescens*, but 97 *H. zea* adults taken in light trap during period; total to date 308 *H. zea* and 4 *H. virescens*. (Taft et al., July 5). GEORGIA - *H. zea* eggs and larvae per 100 terminals by county: Colquitt - eggs 4 and 10, larvae zero in 2 fields; Turner - eggs 8 and 10, larvae 0 and 1 in 2 fields; Worth - eggs 0 and 4, larvae zero in 2 fields; Tift - eggs 0, 6, and 10, larvae 0, 4, and 2 in 3 fields. (Womack, July 6). ALABAMA - Heavy in numerous isolated fields in several southern and central counties; controls difficult. (McQueen). MISSISSIPPI - *H. zea* and *H. virescens* remain generally light in south delta area week ending July 5; second and third instars averaged 1-2 per 100 terminals in most fields. Very few eggs noted indicates infestation will not increase. *H. zea* and *H. virescens* remained low week ending July 12; mostly second and third instars. Egg counts (very low) 1 percent or less in most fields. Average percent larval infestation by county: Issaquena, 2 in 30 fields; Washington, 1 in 6; Attala, 3 in 15; Sharkey, 4 in 40; Holmes, 1 in 10; Jefferson Davis, 2 in 75 fields. (Dinkins). *H. zea* damaged squares in 18 of 22 fields in delta counties; percent infestation averaged 1.5 (maximum 3.0). Eggs and larvae very few. Moth flight very low but expected to increase in next 7-10 days. (Pfrimmer et al.). LOUISIANA - *H. zea* larvae ranged 1-3 (average 1.3) per 100 squares in 19 of 135 fields examined in Madison Parish week ending July 4; percent damaged squares ranged 1-10 (average 3.8) in 109 fields; no damage found in 26 fields. Eggs ranged 1-5 (average 1.7) per 100 terminals in 49 of 117 fields checked; larvae ranged 1-6 (average 2.1) per 100 terminals in 37 fields. *H. zea* infested 84 of 112 fields in Madison Parish week ending July 11; percent infestation averaged 1.7 and ranged 1.0-5.0. Eggs and larvae very light in terminal counts of 138 fields. (Cleveland et al.). ARKANSAS - Eggs, larvae, and/or both found in 1,757 fields. Percent damaged squares averaged less than 1 in 331 fields, 1-2 in 414 fields, 2-5 in 195 fields, 5-8 in 31 fields, 8+ in 1 field; no damaged squares found in 5,500 fields. Number of moths on sugar lines very low. (Boyer et al.). TEXAS - Remain light in McLennan and Falls Counties. Eggs ranged 0.3-3.3 (average 1.4) and larvae 0-3.3 (average 0.8) per 100 terminals in 20 treated fields; eggs 0-5 (average 2.2) and larvae 0-3.3 (average 1.3) per 100 terminals in 11 untreated fields. Percent damaged squares ranged 0.3-4.0 (average 1.1) in 14 treated fields and 0.2-5.0 (average 2.6) in 17 untreated fields. Total of 28 larvae determined *H. virescens* and 19 *H. zea* of 47 larvae collected previously on cotton. (Cowan et al.). In High Plains area, light in Gaines, Mitchell, and Yoakum Counties. (Almand, July 9). ARIZONA - *H. zea* first instars averaged about 3 per 100 plants in Safford, Graham County. (Ariz. Coop. Sur.).

CABBAGE LOOPER (*Trichoplusia ni*) - SOUTH CAROLINA - Total of 7 adults taken in light trap at Florence; total to date 25. (Taft et al., July 5).

BEEF ARMYWORM (*Spodoptera exigua*) - NEW MEXICO - Continues light on cotton in Chaves and Eddy Counties. (Mathews et al.).

TARNISHED PLANT BUG (*Lygus lineolaris*) - MISSISSIPPI - Mostly nymphs moderate, 15 per 100 terminals in Yazoo County. (Dinkins, July 5). Averaged 1.45 (maximum 5) per 100 terminals in 12 of 24 fields in delta counties. (Pfirmer et al.). LOUISIANA - Ranged 3-18 (average 9.9) per 100 sweeps in 18 of 19 fields examined in Madison Parish week ending July 4 and 1-18 (average 6) per 100 sweeps in 24 of 26 fields week ending July 11. Averaged 7 per 100 sweeps in grass and weeds at 19 locations. (Cleveland et al.).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Counts per 100 sweeps averaged 20 at Casa Grande, San Simon, and Salt River Valley and 10 in Stewart District and Safford area. (Ariz. Coop. Sur.).

COTTON FLEAHOPPER (*Psallus seriatus*) - MISSISSIPPI - Averaged 5-6 per 100 terminals in Yazoo County. (Dinkins, July 5). TEXAS - Light in Gaines, Hale, Lamb, Lubbock, Lynn, Martin, and Yoakum Counties; ranged 5-25 per 100 terminals in Mitchell County. (Almand, July 9). Infestation decreased over that of previous period in McLennan and Falls Counties. Counts per 100 terminals averaged 10.4 (maximum 20.3) in 20 treated fields and 13.4 (maximum 30.3) in 11 untreated fields. (Cowan et al.).

FLEAHOPPERS - LOUISIANA - Counts per 100 sweeps averaged 1.3 in 4 of 19 fields week ending July 4 and one in 2 fields week ending July 11 in Madison Parish. (Cleveland et al.). ARIZONA - *Spanogonicus albofasciatus* per 100 sweeps averaged 20 at San Simon (Kozloski) and 10 in Stewart District, Cochise County (Ariz. Coop. Sur.).

SAY STINK BUG (*Pitea sayi*) - ARIZONA - Counts per 100 sweeps averaged 7 in 75-acre field at Safford, Graham County, and 10 at San Simon, Cochise County. (Ariz. Coop. Sur.).

COTTON APHID (*Aphis gossypii*) - OKLAHOMA - Averaged 10 per plant in 6-leaf cotton field in Jefferson County. (Okla. Coop. Sur.).

THRIPS - TEXAS - Remain generally light in Gaines, Hale, Lubbock, Martin, Mitchell, Terry, and Yoakum Counties; light to medium in Swisher, Lamb, and Floyd Counties. (Almand, July 9). ARIZONA - *Frankliniella occidentalis* light, 2 per 100 new leaves, at Marana, Pima County. (Ariz. Coop. Sur.).

SPIDER MITES (*Tetranychus* spp.) - ARIZONA - Becoming problem in many fields at Yuma and Parker, Yuma County. (McHenry). Infested one field at Queen Creek, Maricopa County. (Ariz. Coop. Sur.). MISSISSIPPI - *T. urticae* light in 1 field, medium in one, and heavy in another in delta counties. (Pfirmer et al.). ALABAMA - *T. urticae* increased in several fields in Colbert, Lawrence, and other northern counties past 2 weeks. (McQueen).

TOBACCO

FLEA BEETLES - INDIANA - *Epitrix hirtipennis* adults ranged 1-7 per leaf on 12 to 18-inch tobacco in southern districts. (Huber). TENNESSEE - Damage light in most central area fields; adults 30-60 per 100 plants. (Quillin).

SPOTTED CUCUMBER BEETLE (*Diabrotica undecimpunctata howardi*) - MARYLAND - Damage light to 0.5-acre of tobacco near Largo, Prince Georges County. (U. Md., Ent. Dept.).

HORNWORMS - TENNESSEE - Damage to unsprayed fields moderate. Feeding injury apparent on 20-25 percent of plants in one field. (Quillin).

SUGARBEETS

SUGAR-BEET ROOT MAGGOT (*Tetanops myopaeformis*) - NORTH DAKOTA - Larvae caused light damage to sugarbeets near Amenia, Cass County. This is first known economic infestation in county. Pest normally only problem in Walsh and Pembina Counties. (Dogger).

BEET WEBWORM (*Loxostege sticticalis*) - COLORADO - Adult flights decreased in Arkansas Valley; 0-15 per 100 sweeps. (Schweissing). WYOMING - Larvae averaged 1 per 100 sweeps in Park County. (Parshall).

PALE-STRIPED FLEA BEETLE (*Systema blanda*) - WYOMING - Heavy in one field near Worland, Washakie County. (Lowry).

LYGUS BUGS (*Lygus* spp.) - WYOMING - Adults averaged 7 per 100 sweeps in Park County. (Parshall).

MISCELLANEOUS FIELD CROPS

SUNFLOWER MOTH (*Homoeosoma electellum*) - CALIFORNIA - Larvae medium in safflower plantings in Westmorland, Imperial County. (Cal. Coop. Rpt.). NORTH DAKOTA - Adults of this species and *Phalonia hospes* active in sunflower fields in Grand Forks and Traill Counties. (Brandvik).

POTATOES, TOMATOES, PEPPERS

COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) - MAINE - Small numbers on potato foliage in Bridgewater district; reported in other districts. (Shands et al.). RHODE ISLAND - Late instars common in unsprayed potato fields July 9. (Field). MARYLAND - Defoliation and damage light to medium to set tomatoes on untreated plants on lower Eastern Shore. (U. Md., Ent. Dept.). WYOMING - Heavy on garden potatoes at Powell, Park County; none in treated potato fields. (Parshall).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - DELAWARE - Pupation heavy in peppers in southwest Sussex County; adults emerging in eastern area of county. (Boys, July 11).

TOMATO FRUITWORM (*Heliothis zea*) - ALABAMA - Light to medium in several commercial fields in St. Clair and Blount Counties. (Jackson et al.). ARKANSAS - Declined on tomatoes in Lincoln County. (Daniel). Very light on tomatoes in Crawford County. (Roberts). ILLINOIS - Common in tomato patches in southern half of State. (Ins. Sur. Bull.).

HORNWORMS (*Manduca* spp.) - NEVADA - Larvae increasing on 20 acres of greenhouse tomatoes at Las Vegas, Clark County. (Zoller).

Potato Aphids in Maine - *Macrosiphum euphorbiae* slightly more abundant on untreated potatoes in all districts than *Aphis nasturtii*; *Acyrtosiphon solani* present in small numbers. *Myzus persicae* trace at Presque Isle; larger numbers found in early planted field at Houlton; none found in Lee district. All species averaged 0.3 per plant at Presque Isle with 15 percent of plants infested; this about double counts and percent infestation of previous week. Aphid numbers and rate of increase generally higher in Houlton and Lee districts. (Shands et al.).

GREEN PEACH APHID (*Myzus persicae*) - NEW JERSEY - Heavy populations damaged egg-plant near Trenton. (Ins.-Dis. Newsltr.). RHODE ISLAND - Heavy; building up in unsprayed potato fields July 10. (Kerr, Field).

POTATO APHID (*Macrosiphum euphorbiae*) - RHODE ISLAND - Heavy; building up in unsprayed potato fields July 10. (Kerr, Field).

FALSE CHINCH BUG (*Nysius ericae*) - COLORADO - Ranged 50-800 per 100 sweeps on potatoes in Otero County; no problem in most fields. (Schweissing).

BEANS AND PEAS

PALE-STRIPED FLEA BEETLE (*Systema blanda*) - COLORADO - Adults damaged beans in Cheyenne Wells area, Cheyenne County, and Sedgwick area, Sedgwick County; ranged 10-20 per 100 sweeps. (Johnson). WYOMING - Adults heavy and damaging beans near Douglas, Converse County. (Nicholls).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - NEW YORK - Adults numerous in some fields and scarce in others in Monroe County. (N.Y. Wkly. Rpt., July 8).

RHODE ISLAND - Adults active in some fields July 2. (Field). DELAWARE - Increasing on beans in home gardens and some commercial fields. (Boys, July 11). WEST VIRGINIA - Larvae light, 1 per 10-15 plants, in Monongalia County. (Dorsey, July 5). MICHIGAN - Egg hatch begun in State. (Wells, July 8). COLORADO - Adults 0-1 per 20 plants in some bean fields in Crowley, Otero, and Pueblo Counties. (Schweissing).

COWPEA CURCULIO (*Chalcodermus aeneus*) - GEORGIA - Moderate on peas in Tift County. (Womack, July 6).

COLE CROPS

DIAMONDBACK MOTH (*Plutella xylostella*) - NEW YORK - Active in few cabbage fields in Ontario and Yates Counties; larvae heavy in some cabbage in Orleans, Genesee and Niagara Counties. (N.Y. Wkly. Rpt., July 8).

CABBAGE LOOPER (*Trichoplusia ni*) - CALIFORNIA - Larvae medium on cabbage in Red Bluff, Tehama County. (Cal. Coop. Rpt.). NEW JERSEY - First larvae of year causing light injury to cabbage field near Lumberton. (Ins.-Dis. Newsltr.).

BLACK CUTWORM (*Agrotis ipsilon*) - OREGON - Spotty in turnips at Eugene, Lane County, and Corvallis, Benton County. Pupating. (Crowell).

IMPORTED CABBAGEWORM (*Pieris rapae*) - WEST VIRGINIA - Larvae ranged 2-3 per cabbage plant in Monongalia County. (Dorsey, July 3). VIRGINIA - Large larvae causing severe damage to kale and tops of rutabagas in Montgomery County. (Allen, July 6).

HARLEQUIN BUG (*Murgantia histrionica*) - COLORADO - Adults heavy, 30-40 per plant, in radish fields in Wray area, Yuma County. (Johnson).

WESTERN POTATO FLEA BEETLE (*Epitrix suberinita*) - COLORADO - Adult damage heavy in radish fields in Wray area, Yuma County; ranged 400-500 per plant. (Johnson).

CUCURBITS

SQUASH BUG (*Anasa tristis*) - CALIFORNIA - Medium on squash vines in Gerber, Tehama County. (Cal. Coop. Rpt.). NEW MEXICO - Adults and nymphs abundant on squash and related plants in Albuquerque area, Bernalillo County, and Las Cruces area, Dona Ana County. Control difficult. (Heninger, Nielsen). ARKANSAS - Averaged one per 10-15 squash plants in Crawford County; eggs increased. (Roberts). MARYLAND - Adults active on garden squash in Greenbelt, Prince Georges County. (U. Md., Ent. Dept.).

SEED-CORN MAGGOT (*Hyalemya platura*) - WISCONSIN - Severely damaged cantaloup planting near Omro, Winnebago County. (Wis. Ins. Sur.).

GENERAL VEGETABLES

BLACK CUTWORM (*Agrotis ipsilon*) - OREGON - Spotty on carrot and beet at Eugene, Lane County, and at Corvallis, Benton County. Pupating. (Crowell).

CELERY LOOPER (*Anagrapha falcifera*) - MICHIGAN - Adults decreased in light traps in Montcalm County; flight evident past 6 weeks throughout State. (Newman, July 8).

THRIPS (Thrips spp.) - COLORADO - Ranged 0-100 per plant on onions throughout Arkansas Valley; damage in heavily infested fields. (Schweissing). *T. tabaci* 3-4 per plant on onions at Hoyt, Adams County; ranged 10-20 per 100 sweeps. (Johnson).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (*Carpocapsa pomonella*) - CALIFORNIA - Larvae medium in apple fruit at Corning, Tehama County. (Cal. Coop. Rpt.). COLORADO - Second brood taken in sex attractant traps with heavy flight July 6-8 in Mesa County. Up to 40 moths taken in one trap in 3-day period. Lighter in most sprayed commercial orchards. (Bulla). MISSOURI - Moderate on northeast area apples; light to severe in unsprayed central area orchards. (Wkly. Rpt. Fr. Grs., July 9). INDIANA - Pre-pupae continue to leave apples at Vincennes. Second adult flight continues as 79 males taken in virgin female traps in one orchard compared with 89 previous period. First eggs of this brood probably hatched. (Dolphin, July 8). DELAWARE - Entries in one apple orchard. (Boys, July 11). MAINE - Hatched July 6-7. Adults scarce, egg deposition low. High evening temperatures past few days will increase activity. (Boulanger).

ORIENTAL FRUIT MOTH (*Grapholitha molesta*) - WASHINGTON - Total of 60 percent of second-brood larvae full grown in peach terminals July 2 at Parker Heights, Yakima County. (Johnson). TEXAS - Larvae caused much damage to Nacogdoches County peach. (Evans).

PEACH TWIG BORER (*Anarsia lineatella*) - WASHINGTON - Nearly all first summer-generation larvae full grown in peach and prune in lower Yakima Valley, Yakima County. (Johnson, July 5). CALIFORNIA - Larvae medium in peach fruit at Lakeside, San Diego County. Infestations caused heavy culling in most peach areas this spring. (Cal. Coop. Rpt.).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - INDIANA - Adult flights continue to decrease at Vincennes; 100 males taken in sex lure traps compared with 292-2,399 of previous 3 periods. (Dolphin, July 8).

APPLE MAGGOT (*Rhagoletis pomonella*) - MINNESOTA - Adults emerged at Minneapolis and St. Paul. (Minn. Ins. Rpt.). INDIANA - Adult captures (505) continue to increase in abandoned early variety apple orchard at Vincennes. Extensive larval damage expected in abandoned orchards, but not in commercial orchards. (Dolphin, July 8). CONNECTICUT - Emergence increased greatly at Storrs; 124 adults on false apple lures compared with 18 previous period. Emergence should peak next few days. (Savos, July 9). NEW YORK - Emerged in Brockport and Hilton July 1 and in Hamlin July 7 from seeded cages. (N.Y. Wkly. Rpt.). VERMONT - First adult collected July 11 on false apple lures. (MacCollom). MAINE - Females on baited stickyboards at Monmouth July 3; no cage emergence July 5. (Boulanger).

TEPHRITID FLIES (*Rhagoletis* spp.) - MICHIGAN - Larval infestations more numerous than in 1967. Positive in 46 tart cherry and 2 sweet cherry samples from 26 Berrien County properties. Infestations few (2 positive tests) in Kent, Ottawa, and Allegan Counties June 29-July 5. (Hanna).

PLUM CURCULIO (*Conotrachelus nenuphar*) - INDIANA - Egg laying and feeding scars extensive (7.4-19.0 percent) on unsprayed apple fruit at 2 Vincennes orchards;

larvae feeding in apples on ground in unsprayed orchard. (Dolphin, July 8).
CONNECTICUT - Adult collected on false apple lure July 9, latest ever according to observer. (Savos).

SHOT-HOLE BORER (Scolytus rugulosus) - CALIFORNIA - Adults heavy in cherry and apple trees at Rio Vista, Solano County. (Cal. Coop. Rpt.).

EUROPEAN RED MITE (Panonychus ulmi) - COLORADO - Abundant, 1-16 per leaf, in apple orchards at Eckert and Rogers Mesa in Delta County; controls applied. (Bulla).
MISSOURI - Moderate on apple and peach in southeast area and on apple in central area. (Wkly. Rpt. Fr. Grs., July 9). INDIANA - Numbers vary in commercial orchards relative to effectiveness of controls at Vincennes. Adults averaged 0, immatures 0.71, and eggs 0.61 per leaf in treated apple orchard compared with 3.54 adults, 12.49 immatures, and 31.18 eggs per leaf in nearby unsprayed block. (Dolphin, July 8). MICHIGAN - More evident on apple, prune, and peach than few weeks ago. (Newman, July 8). DELAWARE - Increasing in several apple orchards. (Boys, July 11). MAINE - Second summer-generation adults becoming numerous; eggs will be numerous soon. (Boulanger).

SPIDER MITES (Tetranychus spp.) - MISSOURI - Moderate on southeast area apple and peach. (Wkly. Rpt. Fr. Grs., July 9). COLORADO - T. urticae increasing to 0-10 per leaf on cover crops in apple and pear orchards in Mesa County; controls needed. (Bulla).

PEAR RUST MITE (Epitimerus pyri) - COLORADO - Up to 50-100 per leaf damaged few pear orchards in Mesa County, mostly where buildup allowed previous year; russeted fruit in heavily infested areas. (Bulla).

HICKORY SHUCKWORM (Laspeyresia caryana) - ALABAMA - Young pecan nuts beginning to fall from first infestations of year in Bullock and other southern counties. (Bagby et al.).

PECAN NUT CASEBEARER (Acrobasis caryae) - NEW MEXICO - Two infested nuts found in pecan orchard near Chaves by Eddy County line. No damaged nuts found in pecan orchards checked between Eddy County line and Roswell, Chaves County. (Mathews et al.).

WALNUT CATERPILLAR (Datana integerrima) - OKLAHOMA - Averaged 2 webs per tree on 50 pecan trees in Tulsa County. (Okla. Coop. Sur.).

FILBERTWORM (Melissopus latierreanus) - OREGON - First adults in light trap July 9 in filbert orchard near Eugene, Lane County. (Tinker).

PECAN LEAF PHYLLOXERA (Phylloxera notabilis) - OKLAHOMA - Heavy on Ottawa County pecan trees. (Okla. Coop. Sur.).

APHIDS - CALIFORNIA - Monellia caryella nymphs and adults heavy on pecan trees at Kelseyville, Lake County. (Cal. Coop. Rpt.). GEORGIA - Yellow and black forms light to moderate on Tift County pecans. (French, July 6).

CITRUS

Citrus Insect Situation in Florida - End of June - CITRUS RUST MITE (Phyllocoptruta oleivora) infested leaves in 63 percent of groves (norm 49 percent); 41 percent economic (norm 27 percent). Infested fruit in 54 percent of groves (norm 48 percent); 38 percent economic (norm 26 percent). Decreased but still above normal and in high range. Little change expected. Highest districts west, south, and central. TEXAS CITRUS MITE (Eutetranychus banksi) infested 81 percent of groves (norm 76 percent); 48 percent economic (norm 57 percent). Appears to have reached summer peak

slightly below normal high level for June. Decrease expected by end of July. Scattered heavy infestations will occur. Highest districts central, south, and west. CITRUS RED MITE (*Panonychus citri*) infested 61 percent of groves (norm 69 percent); 28 percent economic (norm 45 percent). Lowest for June in 17 years of record. Nearing summer peak of abundance but still at moderate level. Expected to decrease after mid-July. Very few infestations will be important. Highest districts north and west. BLACK SCALE (*Saissetia oleae*) infested 93 percent of groves (norm 81 percent); 79 percent economic (norm 59 percent). Sharply increased to highest June level in 17 years. Additional increase expected in July, followed by decrease in August. All districts high. GLOVER SCALE (*Lepidosaphes gloverii*) infested 87 percent of groves (norm 85 percent); 21 percent economic (norm 35 percent). Below normal but in high range and expected to remain high until August. Highest districts south and east. PURPLE SCALE (*L. beckii*) infested 60 percent of groves (norm 82 percent); none economic (norm 15 percent). Lowest ever recorded for June; will remain near this level. Highest district west. CHAFF SCALE (*Parlatoria pergandii*) infested 50 percent of groves (norm 78 percent); 2 percent economic (norm 20 percent). Lowest June level in 17 years of record. Little change expected. Highest district east. YELLOW SCALE (*Aonidiella citrina*) infested 69 percent of groves (norm 70 percent); 3 percent economic (norm 14 percent). Below normal; will remain in low to moderate range in most districts. Highest district west. AN ARMORED SCALE (*Unaspis citri*) in more groves (16 percent) than last June (12 percent) but infestations lighter. WHITEFLIES reached normal high level for June; will decrease. MEALYBUGS entered high range, will remain near normal high level through July. Few scattered infestations will be important. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

SMALL FRUITS

WESTERN GRAPE LEAF SKELETONIZER (*Harrisina brillians*) - NEVADA - Second-generation adults laying eggs at Las Vegas, Clark County. (Zoller).

STRAWBERRY CROWN MINER (*Aristotelia fragariae*) - CALIFORNIA - Larvae medium on strawberry plants at Portola, Plumas County. (Cal. Coop. Rpt.).

RASPBERRY CANE BORER (*Oberea bimaculata*) - WISCONSIN - Girdled tips of raspberry plants wilting at Dane County location. (Wis. Ins. Sur.). MINNESOTA - Numerous in some home raspberry plantings at Rochester. (Minn. Ins. Rpt.).

GRAPE PHYLLOXERA (*Phylloxera vitifoliae*) - ARIZONA - Galls heavy on foliage; all stages on grapes at Cherry, Yavapai County. (Carver). Det. by D. Tuttle. (Ariz. Coop. Sur.).

BLUEBERRY THRIPS (*Frankliniella vaccinii*) - MAINE - Hatch reaching peak at Sedgwick, Hancock County; earliest nymphs nearly full grown. (Boulanger, July 5).

BLUEBERRY MAGGOT (*Rhagoletis mendax*) - MAINE - Emergence began June 29; increasing slowly. Numbers low to date. (Boulanger).

FOREST AND SHADE TREES

SOUTHERN PINE BEETLE (*Dendroctonus frontalis*) - Infestations continue in Alabama, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Texas. Seasonal increases expected in most areas; already increased on Bankhead National Forest in Alabama and on private lands in eastern Texas. Salvage program in 4-county area of northeastern Georgia reduced infestations. (South. For. Pest Rptr., June). TENNESSEE - Scattered active spots in Loudon County; about 5 spots near Loudon. (Applegate).

NORTHERN PINE WEEVIL (*Pissodes approximatus*) - OHIO - New adults of 1968 generation on Scotch and white pine Christmas trees in Lake County. (Rose).

JACK-PINE BUDWORM (*Choristoneura pinus*) - WISCONSIN - Browning of jack pine severe on 5,000-10,000 acres in northwestern Juneau County. (Wis. Ins. Sur.).
MINNESOTA - About 15-20 percent of last instars in pupal stage in east-central areas and 25-30 percent in north-central areas. (Minn. Ins. Rpt.).

YELLOW-HEADED SPRUCE SAWFLY (*Pikonema alaskensis*) - MINNESOTA - Defoliated white spruce in northern area July 8: many reports of damage to roadside and plantation white spruce from all northern areas. Last instars at present consuming much foliage. (Minn. Ins. Rpt.).

LARCH SAWFLY (*Pristiphora erichsonii*) - VERMONT - Up to full-grown larvae on European larch in Washington County. (MacCollom). WEST VIRGINIA - Damage moderate on ornamental larch in Arbovale. Det. by A. Cole. (Wenger, July 5).
MINNESOTA - Larvae very common again in 1968: first to middle instars in north-central area. Severe tamarack defoliation expected in most areas. (Minn. Ins. Rpt., July 8).

ADELGIDS (*Adelges* spp.) - MICHIGAN - *A. cooleyi* eggs of overwintering forms laid. Hatched in southern Lower Peninsula; complete hatch expected in 7 days further north in Charlevoix County. (Wallner, July 8). MINNESOTA - *A. abietis* in some white spruce nursery plantings; some galls drying up. (Minn. Ins. Rpt., July 8).

PINE TORTOISE SCALE (*Toumeyella numismaticum*) - MINNESOTA - Hatching in east-central area since July 2; populations not heavy. (Minn. Ins. Rpt.).

SARATOGA SPITTLEBUG (*Aphrophora saratogensis*) - WISCONSIN - Adults emerged near Warrens, Monroe County. (Wis. Ins. Sur.).

ELM LEAF BEETLE (*Pyrthalta luteola*) - GEORGIA - Heavily damaged elm foliage in Gwinnett County. (Baughman, July 6). OKLAHOMA - Adults feeding and laying eggs: hatch light with second-generation larvae feeding. (Okla. Coop. Sur.). KANSAS - First-generation adults laying eggs in many areas. (Brooks). NEBRASKA - First-generation adults emerging in Nemaha County: emergence about 10 percent complete. Foliar damage 50-60 percent on American and Siberian elms at Auburn. (Roselle).
DELAWARE - Larvae damaged elm leaves in several areas. (Boys, July 11). NEW JERSEY - Larvae active in central counties. (Ins.-Dis. Newsltr.).

ALDER FLEA BEETLE (*Altica ambiens*) - OREGON - Severely skeletonized 50 percent of alders along coast between Florence, Lane County, and Newport, Lincoln County. (Larson).

BARK BEETLES - NEVADA - Many *Scolytus multistriatus* adults fed in axils of elms, caused severe bleeding at Las Vegas, Clark County. (Zoller). CALIFORNIA - *Pseudopityophthorus pubipennis* adults heavy in white oak trees at Atherton, San Mateo County. (Cal. Coop. Rpt.).

LONG-HORNED BEETLES - OHIO - Goes *tigrinus* adults began emergence: first observed in Scioto Trail State Forest in Ross County June 23. (Donley et al.). *Romuleum rufulum* larval damage to red, black, and scarlet oaks especially prominent this year in same area. Total of 39 attacks counted on 8-inch diameter tree; other trees in area averaged 10 attacks each. (Hay).

FOREST TENT CATERPILLAR (*Malacosoma disstria*) - MICHIGAN - Heavy defoliation over for 1968 in Antrim, Charlevoix, and Kalkaska Counties. Almost all larvae pupated. (Wallner, July 8). MINNESOTA - Pupae 65 percent parasitized in area west of International Falls. (Minn. Ins. Rpt.).

LETTUCE ROOT APHID (*Pemphigus bursarius*) - NORTH CAROLINA - Collected on Lombardy poplar at Zebulon, Wake County, July 2, 1968, by F. Whitfield. Det. by C.F. Smith. This is a new State record. (Weekman).

MAN AND ANIMALS

MOSQUITOES - MAINE - Generally more troublesome than for several years in most areas; however, dry weather limited numbers in northern portion of State. Mansonia perturbans adults first appeared in Orono area, Penobscot County, July 1; expected to increase until mid-July. Entering homes and camps. (Boulanger, July 5).

MICHIGAN - Many Aedes spp. and Culex spp. continue heavy in many areas. (Newman, July 8). **WISCONSIN** - Populations high in most areas; biting severe on warm evenings. Large adult emergence expected from flood pools as result of rains 2 weeks ago. (Wis. Ins. Sur.). **MINNESOTA** - Aedes vexans present in 593 samples and Culex restuans in 566 of 1,374 larval samples taken week ending June 29 in Metropolitan Mosquito Control District. Total of 10,766 females taken in light traps; 9,832 were A. vexans. This species also predominant in day and evening bite collections. Mosquitoes reached alltime seasonal high week ending July 6, as predicted; most mosquitoes 7-10 days old. Significant decreases expected next 7 days. A. vexans predominant. Mansonia perturbans emergence begun; adults will probably reach peak July 15 or 20. (Minn. Ins. Rpt.). **WYOMING** - Adults numerous and annoying in meadow areas of Teton, Sublette, Carbon, and Lincoln Counties. (Parshall). **RHODE ISLAND** - Prevalent throughout State July 9. (Field). **TEXAS** - Mosquitoes during June in Jefferson County as follows: C. pipiens quinquefasciatus increased considerably during first part of month, but significantly decreased since 8-day rain. C. salinarius common in southern part of county; reached total of 900 on night of June 24 in Pleasure Island light trap. Aedes sollicitans reached epidemic level near end of month; common as far north as south Beaumont. A. taeniorhynchus appeared latter part of month. A. vexans in more northern parts of county. Psorophora ciliata numerous and annoying. P. confinnis very heavy; adults taken in salt marsh areas; 860 adults in light trap June 3 highest collection. Mansonia perturbans continued to occur and appeared on Pleasure Island; still common in Beaumont area. Uranotaenia sp. taken on Pleasure Island and in both Beaumont traps; genus most numerous in salt marsh areas. (Jefferson Co. Control Dist.).

SCREW-WORM (Cochliomyia hominivorax) - Continued to spread in Texas, New Mexico, Arizona, and California. Officials have urged all livestockmen in epidemic area to hold off surgical operations on animals and to immediately treat all wounds to halt spread of the pest. Emergency inspection stations at State borders may be necessary to prevent illegal movement of infested livestock from State to State. Currently, officials warn of possibility of carrying the pest into neighboring States such as Louisiana, Mississippi, Arkansas, and southern Oklahoma. This would reestablish a screw-worm population in States that have been free of this pest for many years. As of July 15, a total of 1,149 cases has been reported in the 4 States (the bulk in Texas), the highest case count since 1963. (Anim. Health. Div.).

HORN FLY (Haematobia irritans) - **WEST VIRGINIA** - Averaged 25 per square foot of withers area on cattle. (Dorsey, July 3). **INDIANA** - Ranged 100-800 (averaged 200) per head on pastured cattle in south-central and southeast districts; ranged 30-200 (averaged 50) per head on pastured cattle in central districts. (Huber). **ILLINOIS** - Average per animal by district: Southeast 467, west 75, southwest 148, northwest 1, and west-southwest 103. (Ill. Ins. Rpt.). **SOUTH DAKOTA** - Continues to increase on untreated herds in southeast area. Ranged 100-300 per side on herds observed in Lake, Miner, Sanborn, Jerauld, and Aurora Counties. (Jones, Kantack). Ranged 30-200 per side on untreated Hereford and Angus cattle north of Wagner, Charles Mix County; up to 500 per side on bulls. (Alleman, Coffman). **NEBRASKA** - Up to 500 per head in herd near Lincoln, Lancaster County. (Campbell). **MISSOURI** - Counts from 6 herds in central area averaged 208.5, 148.5, 118.9, 384.7, and 383.5 per head. (Thomas). **KANSAS** - Ranged from 15 to over 1,000 per head in most eastern areas. (Simpson). **OKLAHOMA** - Decreased on cattle checked in north-central and northwest counties. Ranged 200-500 per head on mature cows. Heavy on cattle in Mayes County. (Okla. Coop. Sur.). **ARKANSAS** - Ranged 300-500 per animal in Independence County. (Roberts). **MISSISSIPPI** - Generally light due

to increased use of controls on herds. Counts per head by county: Pike, 60 on 100 head; Hinds, 20 on 178; Washington, 10 on 150; Attala, 25 on 350; Jefferson Davis, 200 on 75 head. (Dinkins).

STABLE FLY (*Stomoxys calcitrans*) - NEBRASKA - Heavy, 15-30 (average 20) per leg, on 2 dairy herds in Lancaster County. Averaged 15-20 per leg on 10 feedlots checked in Saunders and Lancaster Counties; highest count 30-35 per leg. (Campbell). KANSAS - Ranged 6-50 per head in many eastern areas. (Simpson). ILLINOIS - Average per animal by district: Southeast 6, west 1, southwest 27, northwest 0, and west-southwest 23. (Ill. Ins. Rpt.). WISCONSIN - Moderate to severe on cattle in Clark, Columbia, Grant, and St. Croix Counties. (Wis. Ins. Sur.).

DEER FLIES - WISCONSIN - Population high in most sections, particularly in wooded areas. Annoyance to man severe locally in Washburn, Vilas, Juneau, and Adams Counties. (Wis. Ins. Sur.). RHODE ISLAND - *Chrysops* spp. adults biting but not numerous July 9. (Field).

BLACK FLIES - WISCONSIN - Numerous throughout State, particularly near streams; annoyance common some distance from water in several instances. (Wis. Ins. Sur.). RHODE ISLAND - Total of 5 *Simulium* spp. bites in 10 minutes in Washington County July 5. (Field).

FACE FLY (*Musca autumnalis*) - WASHINGTON - Adults 1-5 per beef animal at Prosser, Benton County; generally light in lower Yakima Valley. (Telford, July 5). SOUTH DAKOTA - Continues low on cattle in southeast area; averaged less than 2 per animal on herds checked. (Jones et al.). NEBRASKA - Ranged 3-4 per face in herd near Lincoln, Lancaster County. (Campbell). MISSOURI - Counts (10-cow samples) in 6 herds in central area averaged 0.7, 6.5, 2.5, 6.5, 3.4, and 5.1 per head. (Munson). ILLINOIS - Average per animal by district: Southeast 1.2, west 6.5, southwest 16, northwest 7, and west-southwest 19. (Ill. Ins. Rpt.). WISCONSIN - Annoyance to cattle moderate in most areas; severe in St. Croix County, low in Grant County. St. Croix is a new county record. (Wis. Ins. Sur.). INDIANA - Increased rapidly on pastured cattle last 2 weeks. Counts per head by district: South-central 12-21, southeast 22-78, east-central 14-61, central 8-63, and west-central 14-37. Most severe insect condition encountered during this period. (Huber). WEST VIRGINIA - Averaged 10-25 per face on cattle. (Dorsey, July 3). VERMONT - Annoying pastured cattle in all areas. (MacCollom).

HOUSEHOLDS AND STRUCTURES

A WEEVIL (*Hexarthrum ulkei*) - PENNSYLVANIA - Infested pine post in home in Beaver County May 6, 1968. Det. by R.E. Warner. This is a new county record. (Adams).

BENEFICIAL INSECTS

LADY BEETLES - WYOMING - Adults averaged 9 per 100 sweeps in western alfalfa fields. (Parshall). ARKANSAS - Very low in cotton and soybeans in Jefferson County. (Boyer).

DAMSEL BUGS (*Nabis* spp.) - WYOMING - Adults and nymphs averaged 8 per 100 sweeps in western alfalfa fields. (Parshall). ARKANSAS - Averaged 2 per 30 row feet in soybeans. (Boyer).

A FLOWER BUG (*Orius insidiosus*) - ARKANSAS - Average 20 adults and 8 nymphs to 30 row feet of knee-high soybeans in Jefferson County. (Boyer).

GREEN LACEWINGS (*Chrysopa* spp.) - ARKANSAS - Most numerous predators in cotton in Jefferson County. Eggs not numerous but larvae ranged 10-40 and pupae 1-3 per 40 row feet. (Boyer).

A NEMESTRINID FLY (*Neorhynchocephalus sackenii*) - OREGON - Two specimens of this grasshopper parasite collected in small alfalfa field July 9 at Canby, Clackamas County. Usually found in native grasslands or in old, undisturbed pastures. (Westcott).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BOLL WEEVIL (*Anthonomus grandis*) - TEXAS - In High Plains area, damage 15 percent in early cotton in Mitchell County. Total of 5 overwintered weevils found in 4 fields inside control zone in Kent County; punctured squares in 6 fields. Adults and/or punctured squares in 9 Kent County fields. (Almand, July 9). For Boll Weevil in other areas see page 668-669.

CARIBBEAN FRUIT FLY (*Anastrepha suspensa*) - FLORIDA - Numbers caught increased in recent weeks, counts at Tampa Bay showing much increase. Recent catches on northern fringe area include those at Daytona Beach, Volusia County, and at Forest City, Seminole County. (Fla. Coop. Sur.).

EUROPEAN CHAFER (*Amphimallon majalis*) - NEW YORK - Mating flight observed at Starkey, Yates County, July 2; few isolated reports of flights in Niagara County. (N.Y. Wkly. Rpt., July 8).

GRASSHOPPERS - NEW MEXICO - Nymphs light to heavy in Torrance County; highest count 32 per square yard at Progresso. No large area of solid infestation. *Drepanopterna femoratum* dominant. (Judd). Second to fourth instars 0-1 per square yard in Socorro and Catron Counties. (Hare). Causing extensive damage to ornamentals around homes in Albuquerque area, Bernalillo County; much control in progress. (Heninger). COLORADO - Second to fifth instar *Melanoplus* spp. counts per square yard by county: Cheyenne 0-20; Kit Carson averaged 5-10 in borders; Washington 0-15 (average 5 in borders); Yuma 5-10 (average 8 in borders); Phillips 0-8; Sedgwick averaged 5 in borders; Logan, Adams, and Morgan 0-60 (average 10-15 in borders). Damage light to moderate in most areas. (Johnson). First to third instars abundant in vacant lots and border rows around fields in Mesa County; controls applied. (Bulla). WYOMING - Range grasshoppers 14 per square yard at Glendo study area and 10 per square yard at Guernsey study area July 9-10. *Aulocara elliotti* and *Cordillacris occipitalis* 50 percent adults. *Ageneotettix deorum* dominant, mostly fourth and fifth instars. (Pfadt). NEBRASKA - Nymphs averaged 5 per square yard in field borders and ditches in Nemaha County; mostly *Melanoplus* spp. (Roselle). Nymphs up to 10 per square yard in rangeland northwest of Crawford, Dawes County. (Hagen). NORTH DAKOTA - Scattered economic infestations continue in Richland and Ransom Counties but damage light to date. Marginal counts ranged up to 25 (average 4) per square yard; up to 40 per square yard in some alfalfa. *M. sanguinipes*, *M. bivittatus*, and *M. packardii* dominant where higher numbers found. Development ranged third instar through adult. (Brandvik, McBride). In rangeland areas in southwest, infestations noneconomic with counts up to 10, but averaged less than 1 per square yard in Billings, Golden Valley, and Slope Counties. Species present in these areas include: *M. sanguinipes* (1-3 instar), *M. dawsoni* (1-2 instar), *M. keeleri* (1-2 instar), *Amphitornus coloradus* (2-3 instar). (Toczek, Grasser). MINNESOTA - Cool, wet weather past few weeks decreased much of early hatch in central and west-central districts. Some third and fourth instars present in light sandy soil areas, but counts down in most fields. *M. bivittatus* most affected by unfavorable weather and early hatching *M. femurrubrum* to lesser extent. Light marginal feeding on corn, small grain, and soybeans observed in central districts. First instar *M. femurrubrum* 2-3 per square yard in few alfalfa fields in Yellow Medicine, Lac qui Parle, and Redwood Counties. *M. femurrubrum* hatch increased since first-cutting alfalfa removed. (Minn. Ins. Rpt., July 8). WISCONSIN - *M. femurrubrum* hatch well underway in some southern areas; few second instars present; ranged up to 8 per sweep along alfalfa margins in sandy soil areas. *M. sanguinipes* nymphs less common, mostly third instar. Few *M. differentialis* third instars observed near Brodhead. (Wis. Ins. Sur.).

GYPSY MOTH (*Porthetria dispar*) - PENNSYLVANIA - Caused almost complete defoliation of hardwood and hemlock on 60 acres in Berks County near Schuylkill County line. Pupation 75 percent July 1. (Jeffery). NEW JERSEY - Larvae reported in Martinsville area. (Ins.-Dis. Newsltr.).

JAPANESE BEETLE (*Popillia japonica*) - INDIANA - First adults of season feeding on smartweed July 8 near South Bend, St. Joseph County. (Porter). OHIO - First adults of season July 5 on Morgan County roses. (Jones). WEST VIRGINIA - Adults numerous in St. Albans. (Cole, June 29). VIRGINIA - Light feeding on tassels of corn in Appomattox and Giles Counties. Up to 25 adults per 100 sweeps feeding on red clover heads in Buckingham, Giles, and Pittsylvania Counties. Adults 150 per 100 row feet, injury light to moderate on 12-inch soybeans in Pittsylvania County. (Allen). Medium to heavy on soybeans and peanuts in Nansemond County. Much ragging of foliage, but noneconomic. (Smith). MARYLAND - Adults damaged 20 percent of 35-acre corn stand near Sudlerville, Queen Annes County. Increasing soybean damage expected on shore and southern area in next few weeks. Adult defoliation 20 percent on 10 acres in Easton, Talbot County, and 10 percent on 15-acre field near Hughesville, Charles County. Heavy on rose at Laurel, Prince Georges County. Above normal infestations expected on crops and ornamentals on shore and in southern area in 1968. (U. Md., Ent. Dept.). NEW JERSEY - Adults appearing in many areas. (Ins.-Dis. Newsltr.). RHODE ISLAND - Heavy in Johnston, Providence County; adults light in Smithfield and scattered in Kingston July 8. (Field). VERMONT - First adult on raspberry at Burlington and Rutland. (MacCollom).

MORMON CRICKET (*Anabrus simplex*) - NEVADA - Up to 5 per square yard on 600 acres in Davis Canyon, in Diamond Mountains on Eureka and White Pine County line. (Dann).

PINK BOLLWORM (*Pectinophora gossypiella*) - NEW MEXICO - Beginning to find rosetted cotton blooms in southern Eddy County, especially in fields with heavy infestations in 1967. Total of 8 moths taken in 10 sex lure traps on one night. (Nielsen et al.). Moth counts in 11 sex lure traps in southern Dona Ana County as follows: 19 moths July 8; 18 moths July 9; 8 moths July 10; and 1 moth July 11. (Adams). Moth counts in other sex lure traps by area: Leasburg and Brazito 0; Vado 2 in 6 traps; Anthony 1 in 5 traps; and south of Anthony 10 in 5 traps. (N.M. Coop. Rpt.). ARIZONA - Buildup not following same pattern as in 1967. Larvae easily found in rosetted as well as open blooms and also in bolls in majority of counties by mid-June 1967. Numbers significant only in Graham and Yuma Counties in 1968. Boll infestations 2-40 percent in some Yuma County fields. Adult counts light in sex lure traps; very few moths noted from cage emergence. (Ariz. Coop. Sur.).

WHITE-FRINGED BEETLES (*Graphognathus* spp.) - ALABAMA - Larvae continue to damage soybeans in scattered fields in Monroe County; damage 20 percent to stand at Megargel. (Lemons et al.). NORTH CAROLINA - Adults heavy and causing much foliar damage on some early soybean fields in Union County; larval damage moderate to one young field. (Savage). MISSOURI - *G. leucoloma striatus* collected by L.D. Seagraves at Cardwell, Dunklin County, July 1, 1968. Det. by R.E. Warner. This is a new State record. (Munson).

HAWAII INSECT REPORT

Turf, Pasture - A GRASS WEBWORM (Herpetogramma licarsialis) continues to spread to previously uninfested areas of Maui. Damage spotty in 100 acres of Kikuyu grass in Ulupalakua at 2,000 feet elevation; larvae up to 25 per square foot; Eucelatoria armigera (a tachina fly) and Casinarina infesta (an ichneumon wasp) moderate in area. Adults heavy throughout Maui from 0 to 3,000 feet elevation. On Oahu, larvae decreasing at Kualoa, but light to medium numbers reappearing at golf course and parks at Kaneohe. (Miyahira, Au). Nymphs and adults of GRASS FLEAHOPPER (Halticus chrysolepis), a LEAFHOPPER (Deltocephalus hospes), and a FLEAHOPPER (Spanogonicus albofasciatus) light to medium, 3-8 per square foot, on Bermuda grass in parks and golf courses on Oahu. (Chang). A BILLBUG (Sphenophorus venatus vestitus) remains generally light in lawns and pastures throughout State. (Yoshioka et al.).

Vegetables - DIAMONDBACK MOTH (Plutella xylostella) larvae and pupae medium on broccoli at Pupukeya and Waimanalo; on daikon at Pearl City, Koko Head, and Waianae, Oahu. (Funasaki). CARMINE SPIDER MITE (Tetranychus telarius) generally medium to heavy on various crops and weeds in all farm areas of Oahu; heaviest on snap bean, eggplant, daikon, and watermelon. LEAF MINER FLIES (Liriomyza spp.) medium to heavy in all green onion fields at Waimanalo and Koko Head and in mustard cabbage, Chinese squash, snap bean, watermelon, and tomato fields throughout Oahu. (Sato, Yamamoto).

Fruits - LARGE MANGO TIP BORER (Bombotelia jocosatrix) larvae remain trace on mango throughout Oahu. Surveys negative for a STINK BUG (Plautia stali) on various fruit trees, ornamentals, and weeds. Few additional specimens collected in light traps during past month in Honolulu, Oahu. (Higa).

Ornamentals - Nymphs and adults of a LEAFHOPPER (Protalebrella brasiliensis) heavy, averaged 40 per sweep, on wedelia at Kaneohe, Honolulu, Waipahu, and Waianae on Oahu; foliar damage conspicuous in some areas. (Funasaki).

Beneficial Insects - LANTANA HISPID (Uroplata girardi) larvae and adults medium on 25 acres of lantana in Ulupalakua, Maui, at 1,600 feet elevation. (Ah Sam). Adults of a TACHINA FLY (Trichopoda pennipes) medium on various wild blossoms from 0 to 2,500 feet elevation in many areas of Maui, including Kihei, Kahului, Makawao, Kula, and Lahaina. (Miyahira).

CORRECTIONS

CEIR 18(23):486 - SOUTHWESTERN CORN BORER (Diatraea grandiosella) - TEXAS - Should read A CRAMPID MOTH (Diatraea sp.). (Texas Coop. Rpt.).

CEIR 18(28):630 - EUROPEAN CORN BORER (Ostrinia nubilalis) - NEW YORK - "Infested 25 percent of plants..." should read "Infested 25-50 percent of plants..." (N.Y. Wkly. Rpt.).

INSECT DETECTION

New State Record

LETTUCE ROOT APHID (Pemphigus bursarius) - NORTH CAROLINA - On Lombardy poplar at Zebulon, Wake County, July 2, 1968. Collected by F. Whitfield. Det. by C.F. Smith. (p. 676).

A WHITE-FRINGED BEETLE (Graphognathus leucoloma striatus) - MISSOURI - Collected by L.D. Seagraves at Cardwell, Dunklin County, July 1, 1968. Det. by R.E. Warner. (p. 680).

New County Records

WESTERN CORN ROOTWORM (Diabrotica virgifera) - MISSOURI - Vernon, Cedar, and Hickory Counties. (p. 664-665).

ALFALFA WEEVIL (Hypera postica) - MISSOURI - Polk County. (p. 666).

CLOVER HEAD WEEVIL (Hypera meleus) - MISSOURI - Montgomery County. (p. 666).

CLOVER SEED WEEVIL (Miccotrogus picrostris) - OREGON - Coos County. MISSOURI - Ralls and Montgomery Counties. (p. 666).

MEADOW SPITTLEBUG (Philaenus spumarius) - VIRGINIA - Appomattox and Buckingham Counties. MISSOURI - Monroe and Pike Counties. (p. 667).

FACE FLY (Musca autumnalis) - WISCONSIN - St. Croix County. (p. 678).

A WEEVIL (Hexarthrum ulkei) - PENNSYLVANIA - Beaver County. (p. 678).

Weather of the Week continued from page 660.

Spotty showers fell in the central Great Plains almost daily. In general, they were light and widely scattered in the first half of the week but more numerous and heavier in the latter half. This was the second week in the Texas High Plains and Trans-Pecos with locally heavy showers. A few localities west of Lubbock received 3 to 4-inch showers. Showers fell in the Sierras and the desert in California early in the week and near the end of the week in western Washington and northwestern Oregon. Many western areas and a few widely scattered areas in the Central and East received no rain or only light sprinkles.

TEMPERATURE: The heat over the West increased until maximums in the 90's prevailed from border to border. Temperatures exceeding 100° were common in the southwestern deserts with some localities registering 110° to 116° on a few days. Miles City, Montana, registered 110° on Wednesday and Lewiston, Idaho, 105° on Thursday. Cooler weather prevailed in the East early in the week with afternoon temperatures ranging from the 70's in New England to the middle and upper 80's in Georgia, to 91° at Orlando, Florida, on Thursday. A southerly flow behind a large high pressure area brought warmer temperatures to the East late in the week. By Sunday afternoon, maximums had increased to the high 80's and low 90's from Florida to western New England. Albany, Buffalo, and Rochester, New York, registered 91° on Sunday afternoon. High humidity made the warm afternoon more uncomfortable. Cooler weather came to the Far Northwest late in the week when afternoon temperatures in western Montana remained in the 60's and 70's. (Summary supplied by Environmental Data Service, ESSA.)

[illegible][illegible]

The Spotted Mediterranean Cockroach, Ectobius pallidus (Olivier)
(Dictyoptera, Blattaria, Blattellidae), in the United States

Ashley B. Gurney 1/

This European cockroach was first found established in the United States in 1948, when outdoor collections at East Falmouth, Massachusetts, were reported (1). The spread of this insect has been slow, and until recently it was not known to extend beyond eastern Massachusetts, but in 1967 it was found in Michigan (7). In order that entomologists may be familiar with the recognition characters, distribution, and importance of the species, this note has been prepared. The names Ectobius livens (Turton) and E. lividus (F.) were used in early reports of the species in the United States (1, 2), but investigation of synonymy led to the adoption of Ectobius pallidus (Olivier). The common name has been adopted by the Entomological Society of America.

Ectobius pallidus (fig. 1) is a small species, about 8 to 9 mm. in overall length, including folded front wings (tegmina). General color is light yellow. Numerous small dark brown spots are conspicuous on the front wings and to a lesser extent on the pronotum. The hind wing is notable for a large veinless area at the apex known as the intercalated triangle (fig. 2, itr). Each tarsus bears 2 small claws, the posterior one of each pair clearly longer than the anterior one (fig. 3). The terminal ventral segment of the adult male abdomen bears a single stylus (fig. 4, st). A more detailed description was published in 1953 (2).

This species has been collected in 10 towns within 3 counties of eastern Massachusetts: Middlesex (Natick, Sherborn); Plymouth (Duxbury, Manomet, Plymouth); and Barnstable (Cotuit, Falmouth, East Falmouth, Osterville, West Yarmouth); the most distant of these towns (Sherborn, West Yarmouth) are about 65 miles apart. The two Michigan localities are Bloomfield Hills (Oakland County, about 20 miles north of Detroit), and Detroit.

Abroad, Ectobius pallidus occurs in southern England, Germany, Belgium, France, Italy, Spain, and Portugal (3), as well as in Algeria and Tunisia in North Africa. Among European populations of pallidus, two subspecies and a variety are based on color differences (3). The small dark brown spots on the front wings are less conspicuous in English specimens than in American ones or those from some continental European areas; and it seems probable that the stock leading to the establishment of the species in the United States originated in Portugal or elsewhere in southern Europe. The large number of people of Portuguese ancestry living in the Cape Cod area of Massachusetts, where the first established colonies were found, and their frequent contacts with Portugal, suggest that country as a possible source.

E. pallidus is primarily an outdoor species, living in a variety of field habitats (2, p. 44). Roth and Willis (6) found it at Plymouth, Massachusetts, "numerous under leaf litter in shaded woods." At East Falmouth, Massachusetts, Flint (1) found pallidus active at night running about on trunks of oak trees but in the day hiding under loose lichens and bark, in the bases of Swiss chard plants, under boxes and baskets, and in other outdoor situations. Of its occurrence in southern England, Ragge (4, p. 74) says "Though perhaps most frequently occurring in woodland [it] may also be found on heaths, downland and even sand-dunes. In warm weather, when this insect flies readily, it often occurs on bushes or trees."

1 Systematic Entomology Laboratory, Entomology Research Division, Agr. Res. Serv., USDA

At least three houses in the United States are known to have become infested by E. pallidus. One of the infested houses in Massachusetts was a cottage in a wooded area with underbrush close by; the cottage was said to be overrun by the cockroaches, which even hid beneath shingles of the roof. The Bloomfield Hills, Michigan, colony clustered on the bark of an oak tree in the yard of a house. The cockroaches accumulated on outside brick walls and around basement windows, and some individuals squeezed through small openings and entered the house. No details of the Detroit colony are available, though apparently it was large enough to suggest several years' development.

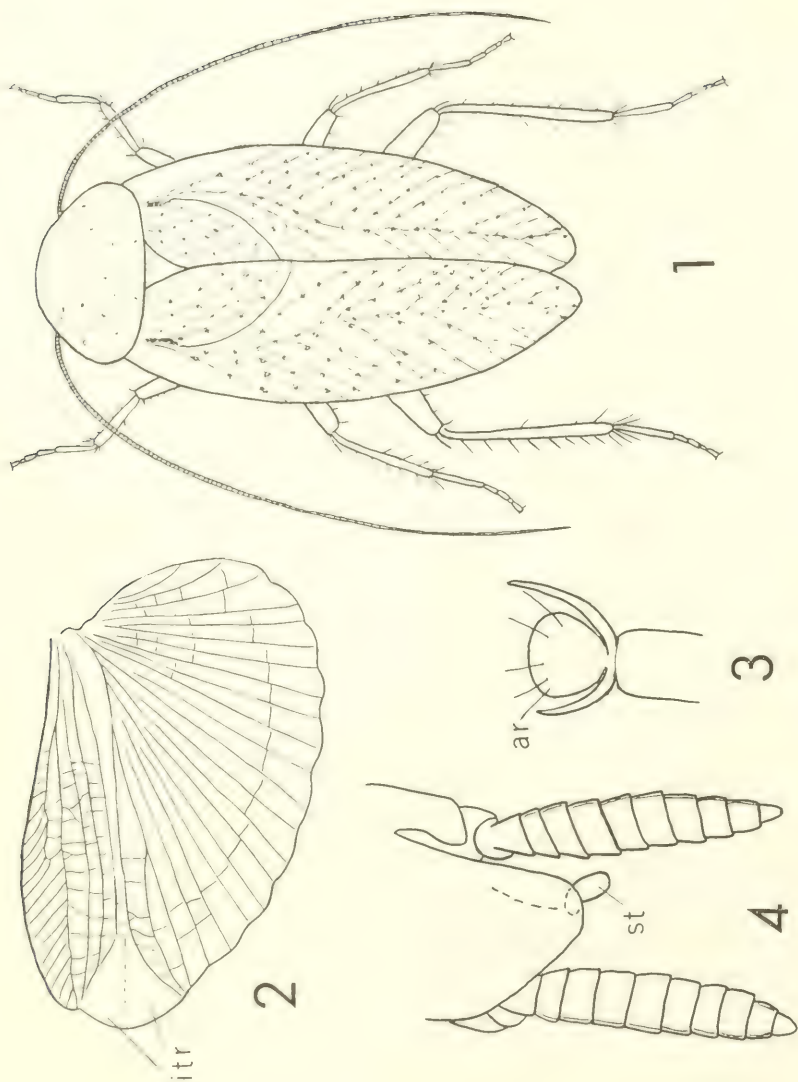
The biology of Ectobius pallidus is not known fully, but it appears that there are five to six nymphal stages and that overwintering occurs primarily in the egg stage, also probably in part as nymphs. A dormant period or diapause for eggs prior to hatching seems necessary, and moisture is required for the swelling and final development of the eggs (6). Egg cases (oöthecae) have been illustrated by Roth (5, figs. 147, 148). Adults appear early in summer and die by late fall or early winter.

This cockroach is unlikely to become an important pest, but gradual spread in this country and occasional instances of indoor infestation are to be expected.

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See page 686 for illustrations



1. General appearance. 2. Hind wing. 3. End of tarsus, showing apical pad (arolium) and claws of unequal length. 4. Ventral view of end of male abdomen.
 Abbreviations: ar- arolium; itr- intercalated triangle; st- stylus.

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VOL. 18 No. 30

July 26, 1968

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

ARMYWORM economic on small grain in west-central Minnesota; moths increased in Berrien and Lenawee Counties, Michigan. CORN LEAF APHID heavy on grain sorghum in some areas of western Texas and eastern New Mexico; increasing rapidly in west-central Ohio. (p. 689).

EUROPEAN CORN BORER damage more prevalent than usual in some New Jersey counties. (p. 690). WESTERN CORN ROOTWORM heavy in north-central Missouri, rootworm adults appearing in several States. (pp. 691-692).

SAY STINK BUG heavy on wheat and seed alfalfa in Humboldt County, Nevada. (pp. 693, 695).

FALSE CHINCH BUG a problem in areas of Iowa and Colorado (p. 693) and Oklahoma (p. 699).

ALFALFA WEEVIL larval damage most severe in past 5 years in Blaine County, Idaho. (p. 693). PEA APHID controls applied to 3,000 heavily infested acres in Nevada; numerous in Colorado and Wyoming. (p. 694).

Heavy BOLL WEEVIL infestations expected in some areas of Tennessee; continues widespread and heavy throughout central and southern Alabama. (p. 696).

GREEN PEACH APHID increasing on tobacco in Maryland and on peppers in Delaware and New York. (pp. 698-699).

APPLE MAGGOT adults increased sharply in New Jersey; emergence heavy in eastern New York and at peak in Connecticut. (p. 702).

JACK-PINE BUDWORM defoliation widespread in northern and central Wisconsin (p. 704); BIRCH LEAF MINER damage extensive in eastern and southeastern counties of same State (p. 706).

FACE FLY increasing on cattle in Ohio. (p. 707). STABLE FLY annoyance severe in Chippewa and Calumet Counties, Wisconsin. (p. 708).

Detection

- BEAN FLY reported for first time in Hawaii. This species is not known to occur in continental United States and is a new Western Hemisphere record. (p. 715).

Other new State and county records on page 713.

Special Report

Insects Not Known to Occur in the United States

Quetta Borer (Aeolesthes sarta (Solsky)) (pp. 717-718).

Reports in this issue are for week ending July 19 unless otherwise indicated.

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For Weather of the Week see page 714.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (*Pseudaletia unipuncta*) - MARYLAND - Adults averaged 6 per night in blacklight trap at Centreville, Queen Annes County. (U. Md., Ent. Dept.). MICHIGAN - Increased unexpectedly in blacklight traps in Berrien County (126 moths) and Lenawee County (164 moths) past week; 73 taken in Newaygo County. These probably spring-brood adults which cause outbreak situation in State. (Janes, July 15). MINNESOTA - Economic on small grain in southern Kandiyohi and Grant Counties in addition to Chippewa, Swift, and Stevens Counties; infestations of previous period not widespread. Heaviest in barley, especially lodged fields; also present in wheat, oats, rye, and corn. Highest count averaged 8 per square foot in Kandiyohi County barley field; larvae ranged from early instars to full grown. Most larvae very small and difficult to find. Some fields treated in Chippewa and Grant Counties. (Minn. Ins. Rpt.).

CORN EARWORM (*Heliothis zea*) - NEW YORK - Undetected in Hudson Valley. (N.Y. Wkly. Rpt., July 15). DELAWARE - Few adults in blacklight traps in eastern Sussex County. (Burbutis). MARYLAND - Sugar corn up to 4 percent infested near Wye Mills, Talbot County; no adults to date in Centreville light trap. (U. Md., Ent. Dept.). INDIANA - First through third instars infested 40-90 percent of unsprayed sweet corn in southwest and south-central districts. (Huber). MINNESOTA - Eggs noted in silks of sweet corn. (Minn. Ins. Rpt.). ARKANSAS - Only occasional larvae found in sorghum in southwest area. (Boyer). OKLAHOMA - Larvae averaged 1 per ear in 5 percent of sweet corn field in Tulsa County. (Okla. Coop. Sur.). ARIZONA - Larvae averaged 10 per 100 sweeps on older sorghum at Bowie, Cochise County. (Ariz. Coop. Sur.).

CORN LEAF APHID (*Rhopalosiphum maidis*) - NEW YORK - Numerous in emerging tassel variety in Hudson Valley July 12. (N.Y. Wkly. Rpt.). MARYLAND - Appearing on corn in Frederick County; light to date on Eastern Shore. (U. Md., Ent. Dept.). OHIO - Increasing rapidly, colonies established on corn in west-central area and probably elsewhere in central and southern counties. Colonies on 2-10 percent of plants in Miami, Mercer, and Union Counties; most colonies accompanied by sap beetles. Corn growth rapid due to recent warm weather; tassel and silk emergence in progress and pollination begun in some of earlier planted fields in west-central area. Plant growth up to 7 feet. (Rose). INDIANA - Very light in south-west and south-central districts. No aphids in 60 percent of tassel-in-whorl and tasseling corn, 30 percent with colonies of 5-15 per plant, 9 percent with colonies of 50-75 per plant, and 1 percent with 100-300 per plant in west-central district. (Huber). ILLINOIS - Average per 25 plants by section: Southeast 143, southwest 342, and west-southwest 232. (Ill. Ins. Rpt.). MINNESOTA - Colonies forming in corn whorls in southeast, south-central, southwest, central, and west-central districts. Counts ranged from trace to nearly every plant infested. (Minn. Ins. Rpt.). NEBRASKA - Decreasing on sorghum; ranged 1-1,100 (average 400-600) per whorl on 95 percent of plants. Increasing on corn; ranged 1-75 (average 25) per whorl on 90 percent of plants in 2 Saunders County fields. (Keith, Rai). OKLAHOMA - Heavy numbers, minor damage in Tulsa County sweet corn field. (Okla. Coop. Sur.). TEXAS - Infestation general on grain sorghum in panhandle area; ranged medium to heavy. (Daniels, July 15). Heavy in some counties in Rolling Plains and High Plains areas. Heavy in several sorghum fields (heading out) near Knox City and Munday, Knox County, and in grain sorghum (booting out) in Castro and Sherman Counties; honeydew problem in Knox County area. (Collier et al.). NEW MEXICO - Heavy on grain sorghum in Chaves, Eddy, Luna, Hidalgo, and Curry Counties. (N.M. Coop. Rpt.). ARIZONA - Averaged 250 per 100 sweeps in sorghum in Bowie and Kansas Settlement areas of Cochise County. (Kozloski).

GREENBUG (*Schizaphis graminum*) - NEBRASKA - Ranged 10-2,000 per leaf on 90-100 percent of sorghum plants in 8 fields in Seward, Butler, Saunders, and Lancaster Counties; mostly on lower leaves which are purpling and turning brown. Predators and parasites increasing. About 6 percent of aphids mummified. Lady beetles averaged about 1 per plant, green lacewings about 1 per 3 plants. (Keith et al.). TEXAS - Infestation general on grain sorghum in panhandle area. First found in whorls; colonies currently on undersides of leaves. Ranged 2,000-4,000 per lower leaf in one Potter County field. Also found on western wheatgrass and Johnson grass. (Daniels, July 15).

PAINTED LADY (*Vanessa cardui*) - VIRGINIA - Larvae damaged musk thistle field in Pulaski and Botetourt Counties June 26. (Miller, Amos). OHIO - Larval defoliation serious on some soybeans in 25-acre field in Hardin County; damage general throughout field. Larvae full grown, should pupate soon. (Jones, Blair). Larvae also feeding on soybeans in Van Wert County. (Holtkamp). MINNESOTA - Small larvae still found on Canada thistle; movement to soybeans apparent in central district. Feeding damage light, but could increase when larvae develop. Small larvae most likely from second generation. Found on sunflowers in Polk County; 40 percent of plants infested and damage apparent on top leaves in one field. (Minn. Ins. Rpt.). COLORADO - Second-generation larvae appearing in Larimer County. First-generation larvae estimated to have cut Canada thistle seed production in half in Larimer County. (Simpson).

WYATTS LEAFMINNER (*Ephestia fabae*) - NEW HAMPSHIRE - First adults noted on beans in Portsmouth July 10. (Sutherland). NEW JERSEY - Ranged 20-64 (average 33) per field (25 sweeps) in 4 central area fields. (Ins.-Dis. Newsltr.). NEW YORK - Effects noted in some alfalfa fields in Ontario County. (N.Y. Wkly. Rpt., July 15). MARYLAND - Increase begun in central area. Infestations light, but some fields yellowing around margins in Frederick County. Remains light to date on Eastern Shore. Increasing on soybeans in Talbot and Queen Annes Counties. (U. Md., Ent. Dept.). OHIO - Damage continues in second and third-crop alfalfa in parts of State. Ranged 4-24 (average 11) per sweep in Clark, Darke, Van Wert, and Auglaize Counties. Yellowing evident in fields with larger populations. (Rose). Less than one to 6 per sweep in various fields in Medina County. (Thoburn). MICHIGAN - Light in alfalfa from Jackson to New Buffalo July 11; heaviest in field margins. Counts per 20 square feet in margins averaged 1 in one field and 3 in another. Some nymphs in few soybean fields in State. (Janes).

POTATO PSYLLID (*Paratrioza cockerelli*) - WYOMING - Adults increasing, averaged 0.5-4 per 100 sweeps, in untreated potato fields in Goshen and Laramie Counties; treatments planned. No adults or nymphs found in fields treated with systemics at time of planting. Adults heavy, 15 per 100 sweeps, on matrimony vine in Torrington, Goshen County. (Parshall). COLORADO - Adults 0-2.5 per 100 sweeps in Weld County; no nymphs. (Johnson).

SPOTTED ALFALFA APHID (*Acrisophis saculata*) - INDIANA - Reported for first time this season on alfalfa in light soil areas of southwest district and in moisture-stressed south-central district. Counts per sweep ranged 3-14 in southwest district and 8-31 in south-central district. (Huber). ARKANSAS - Ranged 200-250 per 100 sweeps in alfalfa in Lafayette County; 75 percent alates. (Boyer). KANSAS - None found in any alfalfa examined in Greeley, Hamilton, Kearney, or Finney Counties. (Simpson).

TOBACCO HORNWORM (*Manduca sexta*) - MARYLAND - Light throughout southern area. (U. Md., Ent. Dept.).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NEW HAMPSHIRE - Late instars at Litchfield July 16. (Sutherland). NEW YORK - All instars on sweet corn in Hudson Valley; fourth instars most numerous. Fifth instars noted; occasional moths in fields and in traps. First-generation moths due to increase from mid-July to mid-August. (N.Y. Wkly. Rpt.). NEW JERSEY - Damage more evident than in many years in numerous Hunterdon and Warren County cornfields; larvae 2-3 per plant, common. (Ins.-Dis. Newsltr.). DELAWARE - Adults increasing, averaged 3-4 per night, in blacklight trap collections in Sussex County. Very heavy on field corn. (Burbutis). MARYLAND - Infestations ranged 44-100 percent on corn planted April 15-May 15 in Frederick County, 0-10 percent on corn planted May 18-June 28; one later field near

Thurmont 50 percent infested. Larvae light to heavy on Eastern Shore corn. Infestations 27-60 percent on early plantings and 0-50 on later plantings in Queen Annes County. (U. Md., Ent. Dept.). VIRGINIA - Generally light in Nottoway, Dinwiddie, Sussex, Southampton, Greensville, Brunswick, and Mecklenburg Counties. First-generation larvae heavy in many counties further north. (Allen). ARKANSAS - Very light in corn in Lafayette County; feeding noted in 15-20 percent of tassels. (Boyer). OHIO - Larvae 1-5 per plant in 80-90 percent of plants in about 50 acres of corn in Coshocton County July 12. Corn height about 4 feet; plants will soon tassel. (Bogle). Larvae heavy, 2-3 per stalk, in 75 percent of plants in 40-acre field in Mercer County; evident in several other fields in county. Corn height 5+ feet; plants begun to tassel. (DeBrosse). INDIANA - Pupation 40 percent in southwest and south-central districts as of July 16; mostly fifth with some third and fourth instars remaining. Mostly fourth and fifth instars in west-central district; less than 5 percent pupae. Corn 10 percent tasseled in State as of July 12; much corn will be subject to second-generation damage. First generation generally light due to lateness of corn crop in 1968, but numerous in potatoes. First-generation adults will be more numerous than expected. (Huber). MICHIGAN - Moth activity light as species between broods. No adults collected in Lenawee County since July 1; females collected up to July 12 in Montcalm County. (Janes). ILLINOIS - Average percent plant infestations by district: Southeast 14, southwest 24, and west-southwest 11. Larval average per 100 plants by district: Southeast 7, southwest 20, and west-southwest 17. Percent pupation by district: Southeast 16, southwest 19, and west-southwest 31. (Ill. Ins. Rpt.)

WISCONSIN - Single pupa July 15 east of Janesville, Rock County; mostly fourth and fifth instars, many bored into stalks. (Wis. Ins. Sur.). MINNESOTA - Remains light in southwest, south-central, west-central, central, and southeast districts. Infested plants averaged 4.4-12 per 100 plants in all districts surveyed; 20+ infested plants per 100 in isolated fields rare. Mostly first instars with few second, third, and fourth instars in some fields. Hatch primarily in west-central district. Economic only in west-central and northwest districts in 1968. (Minn. Ins. Rpt.). IOWA - Leaf feeding 5 percent on knee-high corn July 2 at Doon, Lyon County, 2 second instars in whorl of one plant. Mostly third or fourth instars at Le Grand, Marshall County, and Ankeny, Polk County. Moth flight expected last week of July. (Iowa Ins. Inf.). NORTH DAKOTA - Moths increased in light traps. Egg masses 12 per 100 plants (high count) in 48 to 60-inch corn in Richland County; some eggs in black head stage in Cass County. Larvae reported in Dickey County. (Brandvik).

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - ALABAMA - Much larval damage in several Marion County cornfields. (Price). MISSOURI - Caught 15 adults in light trap July 13-19 at Portageville, New Madrid County. (Harrendorf).

SORGHUM WEBWORM (*Celama sorghiella*) - TEXAS - Activity increased on sorghum in several counties in Blacklands area. Controls effective in Limestone County. (Turney, Brown). ARKANSAS - Only occasional larvae found in southwest area. (Boyer).

STALK BORER (*Papaipema nebris*) - IOWA - Killed 50+ percent of corn plants in 2 miles of edge rows (about 1/3 acre) on farm at Algona, Kossuth County; more damage expected. (Iowa Ins. Inf., July 6). WISCONSIN - Damage common in southern counties. (Wis. Ins. Sur.).

FALL ARMYWORM (*Spodoptera frugiperda*) - MARYLAND - First adults of season taken in blacklight trap July 10 at Centerville, Queen Annes County. (U. Md., Ent. Dept.).

WESTERN BEAN CUTWORM (*Loxagrotis albicosta*) - NEBRASKA - Adults taken in light traps in central area. (Tollefson).

CORN ROOTWORMS (*Diabrotica* spp.) - NEBRASKA - Averaged 30 per plant in cornfield in Lincoln County; 2 rings of crown roots destroyed. Noneconomic in other fields. (Roselle). SOUTH DAKOTA - Development more advanced near Oral, Fall River County, than in eastern counties. Population mostly third instars or pupae; few adults present. Larvae ranged 10-30 per plant; peak larval numbers past. Few *D. virgifera*

adults present in cornfield in northern Yankton County July 12. (Jessen). MINNESOTA - Larvae very light in southwest, south-central, central, west-central, and a few counties in southeast district. Larvae only 1-2 per plant in widely scattered fields; eggs still hatching. Second and third instars in most infested fields; few pupae found in southwest district. Damage to roots light. (Minn. Ins. Rpt.). IOWA - Averaged 11.4 per plant on 7 treated corn plants (18 inches tall) at Knoxville, Marion County; treated July 2. Ranged 6-8 per treated plant in Bremer County field. Mostly third instars followed by second instars in State; pupae present. (Iowa Ins. Inf.). TENNESSEE - D. undecimpunctata howardi infested some Warren County sweet corn; damage moderate. (Gordon, Warren, July 12).

WESTERN CORN ROOTWORM (Diabrotica virgifer) - IOWA - First adults of 1968 collected by R. Jacques in Cass County July 6; 100 third instars, prepupae, and pupae under untreated plant. (Iowa Ins. Inf.). MISSOURI - Heavy in fields scattered through north-central area. Adults ranged 8-50+ per plant; larval damage to roots in all fields. (Munson). KANSAS - Adults in cornfields in Finney and Wichita Counties. (DePew). COLORADO - Larvae and adults in Logan County and larvae in Weld County. (Johnson et al.). WYOMING - Development progressing rapidly, few adults in cornfield. Larvae, pupae, and adults averaged 6.2 per plant in cornfield near Torrington, Goshen County. Pupae about 33 percent of population. (Burkhardt).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - WISCONSIN - Two fields sampled in Rock County July 12. One field with 2.5 larvae per plant in treated part and 21.66 larvae per plant in untreated part; 8 percent prepupae and 3 percent pupae. Second field treated, averaged 4 larvae per plant. Larvae per plant at 4 untreated sites ranged 2.5-15.0 and at treated site averaged 2.5 July 16. Mostly larvae present; untreated fields with advanced stages up to adult. First signs of lodging July 16 at Arlington, Columbia County, following light rain; some plants loose and easily dislodged. First adult of season in tasseling field of 100-day corn east of Janesville July 15. (Wis. Ins. Sur.). MICHIGAN - Damaged field corn plants with typical symptoms; stalk elbowing noted near ground level. (Janes, July 15).

FLA BEETLES (Chaetocnema spp.) - OKLAHOMA - Ranged 3-6 per plant in Tulsa County sweet corn field. (Okla. Coop. Sur.). MARYLAND - C. pulicaria continues heavy in many central area cornfields. (U. Md., Ent. Dept.).

SORGHUM MIDGE (Contarinia sorghicola) - ARKANSAS - Adults ranged from 3-4 to 25-30 per head in sorghum field in bloom in Lafayette County. This field planted in grain sorghum in 1967 and in heavy Johnson grass area. Negative in isolated grain sorghum fields in Lafayette, Little River, and Miller Counties where crop not grown in 1967. Much grain sorghum very late in southwest area due to wet weather early in year; many fields where crop just reached a stand or is 6-8 inches high. (Boyer). TEXAS - Increased on sorghum throughout Blacklands area. Most grain past stage for damage. (Turney).

A LEAFHOPPER (Allygus mixtus) - OREGON - Adult collected in blacklight trap in cornfield in Canby, Clackamas County, in August 1967. (Larson). This is a new State record and new to western United States. Det. by P. Oman. Introduced into eastern United States; no economic importance known. (Westcott).

RICE STINK BUG (Oebalus pugnax) - TEXAS - Moderate to heavy in grain sorghum near Lampasas, Lampasas County. (Texas Coop. Rpt.).

FALSE CHINCH BUG (Nysius ericae) - TEXAS - Heavy on sorghum in some areas of Trans-Pecos region. (Neeb).

ONION THRIPS (Thrips tabaci) - WASHINGTON - All stages damaged sweet corn at Othello, Grant County. (Landis, July 12).

GARDEN SYMPHYLAN (Scutigerella immaculata) - OHIO - Destroyed some sweet corn in Morrow County; about 150 per plant in soil around root systems. Field corn patches totaling about 1.5 acres also damaged. (Reutter). Noted on roots of field corn in Clinton County. (Baxter, Miller).

SMALL GRAINS

BARLEY THRIPS (*Limothrips denticornis*) - NORTH DAKOTA - Damage up to 20 percent in some early seeded barley fields in Wells, Foster, and Eddy Counties. (Kaatz).

ENGLISH GRAIN APHID (*Macrosiphum avenae*) - NORTH DAKOTA - Colonies evident on heads of wheat in southeast area. Aphids noneconomic, up to 14 per head, in Cass County. (Brandvik).

SAY STINK BUG (*Pitedia sayi*) - NEVADA - Heavy in 156 acres of wheat in Jungo, Humboldt County. (Atencio).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NEW JERSEY - Infestations ranged up to 5 percent in several Warren County oatfields; light in Gloucester County wheat-field. (Ins.-Dis. Newsltr.).

TURF, PASTURES, RANGELAND

FALSE CHINCH BUG (*Nysius ericae*) - IOWA - Heavy in Pottawattamie County; no damage to crops. (Gunderson). COLORADO - Abundant throughout northeastern area; no damage. (Johnson).

CHINCH BUG (*Blissus leucopterus*) - ALABAMA - Heavy with serious damage to St. Augustine grass lawn in Eufaula, Barbour County; controls in progress. (Beasley, et al.).

GREAT BASIN TENT CATERPILLAR (*Malacosoma fragile*) - IDAHO - Late instars, probably this species, heavy on several hundred acres of bitterbrush, serviceberry, chokecherry, and snowberry in Stump Creek area of eastern Caribou County July 2. (Evans).

A LEAF BEETLE (*Trirhabda canadensis*) - COLORADO - Adults abundant, 20 per square yard, in 1,000-acre area in Colorado National Monument in Mesa County. Foliage loss on sagebrush estimated at 2 percent. (Sisson, Frank).

FORAGE LEGUMES

ALFALFA WEEVIL (*Hypera postica*) - NEW YORK - Larvae less than 1 per sweep in mature second-crop alfalfa in Ulster County. Few larvae remain in some fields in Ontario County; controls ended. (N.Y. Wkly. Rpt., July 15). DELAWARE - Adults averaged 1-3 per 10 sweeps on alfalfa throughout State; very light feeding injury. (Burbutis). MISSOURI - Collected in Schuyler County for new county record. (Munson). WISCONSIN - Larvae collected in Kenosha County June 19 about 8 percent parasitized by *Bathyplectes* sp. Adult taken from alfalfa field near Platteville, Grant County, for new county record. Det. by R.E. Warner. Single adult taken from alfalfa just south of Evansville in northern Rock County. (Wis. Ins. Sur.). SOUTH DAKOTA - Larvae very light, 6 per 600 sweeps, in alfalfa field 9 miles west of Winner, Tripp County. This is new county record. (Jessen). KANSAS - Occasional adult found in alfalfa in Greeley, Hamilton, and Kearney Counties. (Simpson). WYOMING - Larvae decreasing rapidly; little damage to second-crop alfalfa; adults light. Average per 100 sweeps: Converse, 18 larvae and 3 adults; Goshen, 6 larvae and no adults; Platte, 50 larvae and 3 adults; Laramie, 90 larvae and 12 adults; Niobrara, 4 larvae and no adults. (Parshall). COLORADO - Increasing in Logan, Weld, Boulder, Morgan, and Larimer Counties; adults 0-30 and larvae 0-70 per 100 sweeps. (Johnson). NEW MEXICO - Widespread on alfalfa in Farmington, San Juan County; little damage noted. Adults averaged 0-8 and larvae 3-12 per 25 sweeps. (Heninger). NEVADA - Numerous adults holding back second-crop alfalfa hay in several fields in Smith Valley and a few fields in Mason Valley, Lyon County. (Batchelder). This is second year adult damage has occurred in these areas. (Bechtel). IDAHO - Larval feeding damage continuous past 5 weeks and most severe in past 5 years in Hailey area, Blaine County, at 4,500-5,000

feet elevation. (Eakins). OREGON - Larvae averaged from 45 per sweep June 12 to 76 per sweep July 1 with up to 110 per sweep; leaf loss averaged up to 63 percent in untreated test field near Prineville, Crook County. Averaged from 48 per sweep June 14 to 85 per sweep June 28; leaf loss up to 54 percent in untreated test field near Klamath Falls, Klamath County. (Dickason). Larvae averaged 2.7 per sweep in fields at Deer Island, Columbia County; all instars present. Mostly late instars, but no adults. Second-cutting alfalfa starting to bloom; plants 16-18 inches tall. Leaf damage 20-30 percent. (Brown). Larvae averaged 0.4 per sweep in blooming second-cutting field near Lincoln, Polk County, for new county record. Mostly late instars. Two empty cocoons in litter. No adults. Leaf damage negligible. (Westcott).

FLIA BEETLES (*Systema* spp.) - WYOMING - *S. blanda* adults 240 per 100 sweeps in alfalfa field near Torrington, Goshen County. (Parshall). COLORADO - *S. taeniata* adults 0-80 per 100 sweeps in Logan, Weld, Morgan, and Boulder Counties. (Johnson).

SPOTTED CUCUMBER BEETLE (*Diabrotica undecimpunctata howardi*) - OKLAHOMA - Averaged 6 per 10 sweeps on Wagoner County alfalfa. (Okla. Coop. Sur.).

PEA APHID (*Acyrtosiphon pisum*) - OREGON - All forms averaged less than 10 per sweep in blooming alfalfa field at Salem, Marion County, July 16. (Westcott). NEVADA - Ranged 0-100 per stem in alfalfa in Mason and Smith Valleys, Lyon County; about 3,000 heavily infested acres treated. Controls in progress. (Batchelder). IDAHO - Dead parasitized aphids up to 50 per plant. Parasitic wasps and damsel bugs 3 per sweep, lady beetles 5 per sweep July 2. (Homan). Currently very abundant in unsprayed alfalfa being grown for seed on experimental plots at Kimberley, Twin Falls County; parasitism heavy. (Manis). UTAH - Scarce in many fields, 100-250 per 10 sweeps on some second-crop alfalfa in western Millard County. (Roberts). WYOMING - Ranged 25-1,000 (average 274) per 100 sweeps in alfalfa in Converse, Niobrara, Platte, Goshen, and Laramie Counties. (Parshall). COLORADO - Ranged 50-5,000 per 100 sweeps in Logan, Weld, Morgan, and Boulder Counties. (Johnson). ARIZONA - Counts per 100 sweeps in alfalfa averaged 300 at Bowie, 200 at San Simon, Cochise County; and 50 in Maricopa County. (Ariz. Coop. Sur.). NEW MEXICO - Heavy on alfalfa in Leasburg area north of Las Cruces, Dona Ana County. (Eubank, Dickerson). OKLAHOMA - Heavy, 2,500-3,000 per 100 sweeps in Wagoner County alfalfa field. (Okla. Coop. Sur.). MARYLAND - Ranged 6-250 per 10 sweeps in alfalfa in Frederick County. (U. Md., Ent. Dept.).

MEADOW SPITTLEBUG (*Philaenus spumarius*) - MARYLAND - Adults 2-4 per sweep in red clover and alfalfa throughout State. (U. Md., Ent. Dept.). VIRGINIA - Adults generally light in red clover in Prince Edward and Dinwiddie Counties. Dinwiddie County is new county record. (Allen). OREGON - Adults very numerous, averaged 15-20 per sweep, in alfalfa field near Carlton, Yamhill County. (Westcott).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Average per 100 sweeps in alfalfa by county: Yuma, 300-600 at Yuma; Graham, 350-400 at Saiford; Cochise, 20-30 at Bowie and San Simon; Pinal, 80 at Casa Grande. (Ariz. Coop. Sur.). ARKANSAS - Relatively light. 35-40 per 100 sweeps in alfalfa in Lafayette County. (Boyer).

LYGUS BUGS (*Lygus* spp.) - WYOMING - Adults and nymphs averaged 51 per 100 sweeps in alfalfa in Converse, Niobrara, Platte, Goshen, and Laramie Counties. (Parshall). UTAH - Heavy throughout Millard County alfalfa; 3-32 per 10 sweeps in recently treated fields. Large movements recently from forage-harvested fields to seed fields. About 4,500 *Lygus* spp., *L. elisus*, and *L. hesperus* in one night in black-light trap in Delta residential area. Large catches also in whitelight trap. (Roberts). COLORADO - Adults and nymphs 50-100 per 100 sweeps in Logan, Morgan, Boulder, Yuma, Washington, and Larimer Counties. (Johnson). NEW MEXICO - Generally medium to heavy on alfalfa over much of State. (N.M. Coop. Rpt.). ARIZONA - Average per 100 sweeps in alfalfa by county: Yuma, 600-1,100 at Yuma; Maricopa, 300 at Goodyear and Litchfield; Cochise, 150 at Bowie and San Simon; Pinal, 60 at Casa Grande. (Ariz. Coop. Sur.).

TARNISHED PLANT BUG (Lygus lineolaris) - OKLAHOMA - Ranged 3-12 per 10 sweeps in Tulsa and Wagoner County alfalfa. (Okla. Coop. Sur.). VIRGINIA - Adults 8-100 per 100 sweeps in red clover field in Brunswick County; much lighter in Sussex, Dinwiddie, Prince Edward, and Nottoway Counties. (Allen).

A FALSE CHINCH BUG (Nysius raphanus) - NEBRASKA - Averaged 65 per sweep on crambe; curling leaves and stunting plants. (Hagen).

SAY STINK BUG (Pitedia sayi) - NEVADA - Heavy in 150 acres of seed alfalfa in Junco, Humboldt County. (Atencio).

GREEN CLOVERWORM (Plathypena scabra) - MICHIGAN - Some additional moths collected in blacklight traps in Berrien, Montcalm, and Lenawee Counties. (Newman, July 15). DELAWARE - Evident on mature alfalfa in State. (Boys, July 18).

VARIEGATED CUTWORM (Peridroma saucia) - NEVADA - Larvae averaged about 5 per square foot in several alfalfa fields in Mason Valley, Lyon County; holding back second crop until controlled by irrigation. (Batchelder).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - NEVADA - Larvae averaged 1 per square yard in alfalfa in Mason Valley, Lyon County; very little damage. May build up on third crop. (Batchelder).

WEBWORMS (Loxstege spp.) - OKLAHOMA - L. commixtalis larvae averaged 15 per 10 sweeps in Wagoner County alfalfa field. (Okla. Coop. Sur.). INDIANA - L. similalis adults common in southwest area alfalfa, especially in poorer stands. Ranged 2-5 per square yard in field borders, 0-2 within fields. (Huber).

GRASSHOPPERS - VIRGINIA - Generally moderate in red clover in Dinwiddie and Nottoway Counties; nymphs 300-500 per 100 sweeps in 2-acre clover field in Brunswick County. (Allen).

THRIPS - UTAH - Very numerous in alfalfa seed fields not recently treated for Lygus spp. control throughout western Millard County; Frankliniella occidentalis and Thrips tabaci dominant species. (Roberts). ARIZONA - F. occidentalis ranged 800-1,000 per 100 sweeps on Cochise County alfalfa. (Ariz. Coop. Sur.).

CLOVER SEED CHALCID (Bruchophagus platyptera) - MISSOURI - Adults 50-60 per 10 sweeps on east-central area red clover. (Munson).

TWO-SPOTTED SPIDER MITE (Tetranychus urticae) - INDIANA - Discoloration noted in early third-growth alfalfa in dry south-central district and in few scattered southwest district fields. Ranged 1-8 per leaf on 20-60 percent of terminals. (Huber).

SOYBEANS

BEAN LEAF BEETLE (Cerotoma trifurcata) - MARYLAND - Adult damage medium to heavy on 30 percent of 15-acre planting near Morganza, St. Marys County. (U. Md., Ent. Dept.). VIRGINIA - Adults per 100 row feet on soybeans averaged 40-60 in Nottoway County; 30-50 in 25-acre field and 50-100 in 10-acre field in Dinwiddie County. (Allen).

MEXICAN BEAN BEETLE (Epilachna varivestis) - SOUTH CAROLINA - Present in all counties; new adult generation expected to become very numerous about August 1. Controls applied to about 200,000 acres in State during season. (Thomas, July 9). VIRGINIA - Few "new" adults detected on soybeans in Nottoway and Dinwiddie Counties; no immatures observed. (Allen).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ALABAMA - Earlier girdling now lodging plants in 3,200-acre planting in Hale County; controls planned. Lodged 1-2 stalks per 10 row feet in Dallas County field of several hundred acres.

(Jones, Hines). GEORGIA - Light in Grady and Stewart Counties. (George, Lowry, July 12).

GELEN CLOVERWORM (Plathypena scabra) - OKLAHOMA - Larval damage light to medium in Tulsa County field. (Okla. Coop. Sur.). IOWA - Remains noneconomic in most fields in southeast and central areas; defoliation less than 10 percent. (Bradon, Gunderson).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - GEORGIA - Light to moderate in Grady County. (George, French, July 12).

LYGUS BUGS (LYGUS spp.) - ARIZONA - Averaged 10 per 100 sweeps in 40-acre field at Bowie, Cochise County. (Ariz. Coop. Sur.).

THRIPS - MARYLAND - Damage light, but increasing in many fields in Dorchester, Wicomico, and Worcester Counties. (U. Md., Ent. Dept.).

SPIDER MITES - MARYLAND - Increasing as predicted; yellowing of border rows evident throughout lower Eastern Shore areas. No buildup on southern area fields to date. (U. Md., Ent. Dept.).

PEANUTS

SPIDER MITES - GEORGIA - Light to heavy across peanut belt. (French, July 12).

SOUTH CAROLINA - Tetranychus urticae yellowing peanuts near row ends and in field interiors in Sumter County. (Nettles, July 17).

COTTON

BOLL WEEVIL (Anthonomus grandis) - SOUTH CAROLINA - Generally light at Florence week ending July 12; first-generation weevils noted. Percent larval infestations ranged 0-33.5 in treated plots and 0-16.0 in untreated plots. Total of 14 adults on 9 groups of 10 potted plants; total to date 47. Total of 28 adults taken in male attractant traps; total to date 2,832. (Taft et al.). Punctured squares continue to increase as first-generation weevils emerge from fallen squares July 9-17. (Sparks). TENNESSEE - Percent punctured squares ranged 0-50 in southern tier of counties and averaged 32 in untreated fields. Some mortality due to dry weather. Entering period of decreased activity between infestations in older cotton. First generation will be emerging by this time next week. Heavy infestations expected where some rain fell last 2 weeks. (Locke). ALABAMA - Continues generally widespread and heavy throughout southern and central areas. Punctured squares in most of area reduced to low level due to widespread effective controls and proper vigilance. Infestation level much below that of past 2 years. Punctured squares light in most of northern area and also much below that of past 2 years. "Hatchout" of first-generation weevils general, but still light. (McQueen). About half of larvae parasitized in squares lying on ground on 1,500 acres in western Colbert County; punctured squares 1-5 percent. (Pinehardt). MISSISSIPPI - Remained light statewide; expected to increase next period with second-generation emergence. Average percent infestation by county: Chickasaw, 10 in 3 fields; Clay, 10 in 4; Holmes, 6 in 23; Sharkey, 5 in 40; Quitman, 1 in 16; Issaquena, 1 in 19; Washington, 2 in 12; Hinds, 2 in 5; Jefferson, 3 in 2; Union, 4 in 14 fields. (Dinkins). Punctured squares in 7 of 29 fields in delta counties; percent infestation averaged 4 (maximum 15.5) in these fields. (Pfrimmer et al.). LOUISIANA - Total of 5 weevils recovered from cage traps and 4 from winged traps in Madison Parish. No weevils collected from 100 potted cotton plants. Total weevils to date 2,513. Percent square infestations ranged 1-29 (average 9) in 123 fields; average 3 percent higher than previous period. One field infested of 28 checked by row-foot method. (Cleveland et al., July 18). ARKANSAS - Infested 1,782 (28.7 percent) of fields surveyed; above treatment level in 64 fields. (Boyer et al.). OKLAHOMA - Puncture counts ranged 1-6 per 100 terminals in southwest area; 3 adults on 100 terminals in

Greer County field. (Okla. Coop. Sur.). TEXAS - Damaging infestations in 3 of 13 treated and in 13 of 18 untreated fields in McLennan and Falls Counties. Percent punctured squares 0.3-21.6 (average 7) in treated and 0.5-21 (average 9) in untreated fields. (Cowan et al.). For Boll Weevil in El Paso area see page 709.

BOLLWORMS (*Heliothis* spp.) - SOUTH CAROLINA - Percent larval infestations ranged 0-2.5 in treated plots and 0-1.0 in untreated plots at Florence week ending July 12. No *H. virescens*, but 68 *H. zea* adults taken in light trap during period; total to date 376 *H. zea* and 4 *H. virescens*. (Taft et al.). Adults leaving corn and moving to cotton to lay eggs July 9. One and 2-day-old larvae found in terminals July 17. (Sparks). TENNESSEE - Eggs and larvae ranged 1-9 per 100 terminals or squares; some egg laying in plants. Some eggs on squares. (Locke). ALABAMA - Generally light but numbers high in many fields in most counties. (McQueen). MISSISSIPPI - *H. zea* and *H. virescens* remained very low due to effective biological control. Average percent larval infestation by county: Clay, 5 in 4 fields; Holmes, 1 in 23; Quitman, 2 in 16; Issaquena, 2 in 19; Washington, 1 in 12; Union, 6 in 14 fields. (Dinkins). *H. zea* damaged squares in 18 of 29 fields in delta counties; percent infestation averaged 1.5 (maximum 3.5). Very few eggs and larvae found. Adults increased slightly in light trap collections. (Pfrimmer et al.). LOUISIANA - Percent *H. zea* square damage ranged 1-5 (average 1.9) in 110 of 123 fields in Madison Parish; average 0.2 percent higher than previous period. Eggs and larvae very light on terminals in 150 fields. No *H. virescens*, but 16 *H. zea* moths taken in blacklight trap. (Cleveland et al., July 18). ARKANSAS - *H. zea* eggs, larvae, and/or both found in 2,064 fields. Percent damaged squares averaged less than 1 in 833 fields, 1-2 in 802 fields, 2-5 in 345 fields, 5-8 in 54 fields, and 8+ in 7 fields; no damaged squares found in 4,166 fields. Predators very light. Moths on sugar lines very light July 10-16. (Boyer et al.). OKLAHOMA - *H. zea* larvae averaged 4-6 per 100 terminals in early fields in Greer, Jackson, and Jefferson Counties; larvae 2 per 50 row feet in Wagoner County. (Okla. Coop. Sur.). TEXAS - Moths increased sharply in light trap this period compared with previous period in McLennan and Falls Counties. Eggs, larvae, and damage also increased. Eggs ranged 0-13.5 (average 4.3) and larvae 0-13.5 (average 2.1) per 100 terminals in 16 treated fields; eggs 1.0-12.9 (average 6.7) and larvae 0.5-6.5 (average 4) in 15 untreated fields. Percent damaged squares ranged 0-11.5 (average 2.6) in 13 treated fields and 0.8-9.5 (average 3.6) in 18 untreated fields. Percent damaged bolls averaged 8.1 in 5 treated fields and 5.9 in 12 untreated fields. Of larvae previously collected on cotton, 78 percent determined *H. virescens* and 22 percent *H. zea*. (Cowan et al.). NEW MEXICO - *H. zea* light, 1 per 50 plants, on cotton in Chaves County. (Mathews).

BEE T ARMYWORM (*Spodoptera exigua*) - NEW MEXICO - Light in cotton in Chaves and Eddy Counties. (Dickerson, Eubank).

SALT-MARSH CATERPILLAR (*Estigmene acrea*) - LOUISIANA - Total of 7 moths collected in blacklight trap in Madison Parish. (Cleveland et al., July 18).

TARNISHED PLANT BUG (*Lygus lineolaris*) - TENNESSEE - Still causing damage in untreated fields. (Locke). MISSISSIPPI - Found in 9 of 16 fields in delta counties; averaged 2 (maximum 3.5) per 100 terminals. (Pfrimmer et al.). LOUISIANA - Very light in several fields in Madison Parish. (Cleveland et al., July 18).

PLANT BUGS - ARKANSAS - Counts per 100 terminals ranged 1-19 (light) in 5,078 fields, 20-39 (medium) in 46 fields, and 40+ (heavy) in 2 fields. (Boyer et al.). ARIZONA - *Lygus* spp. averaged 50 per 100 sweeps at Safford, Graham County. (Pearson).

FLEAHOPPERS - TEXAS - *Psallus seriatus* light and of little concern except in a few very late-planted fields in McLennan and Falls Counties. Counts per 100 terminals ranged 0-18.8 (average 9.9) in 16 treated fields and 8.5-20.8 (average 14) in 15 untreated fields. (Cowan et al.). ARIZONA - *Spanogonicus albofasciatus* increased, averaged 30 per 100 sweeps, in Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

COTTON APHID (*Aphis gossypii*) - ARIZONA - Averaged 20 per 100 sweeps in 100-acre field at San Simon, Cochise County. (Ariz. Coop. Sur.). OKLAHOMA - Scattered infestations throughout southwest counties. (Okla. Coop. Sur.).

WESTERN FLOWER THRIPS (*Frankliniella occidentalis*) - ARIZONA - Generally present in blooms in all cotton-growing counties; averaged 5+ per bloom. Discolored and disfigured blooms where 15+ per bloom present. (Ariz. Coop. Sur.).

SPIDER MITES - TENNESSEE - Continue to increase; isolated damage becoming heavy in untreated fields. Conditions for increase ideal. (Locke). SOUTH CAROLINA - *Tetranychus urticae* in 39 of 41 fields checked from Oconee to Hampton Counties. (Sparks, July 17). MISSISSIPPI - *T. urticae* light in 3 fields, medium in 1, and heavy in another in delta counties. (Primmer et al.). ARIZONA - *Tetranychus* spp. increased in some fields at Yuma, Yuma County; controls applied. (Ariz. Coop. Sur.).

TOBACCO

GREEN PEACH APHID (*Myzus persicae*) - MARYLAND - Increasing throughout southern tobacco-growing areas; light to medium, ranged 8-20 per 100 plants. (U. Md., Ent. Dept.). VIRGINIA - *Alates* 35-75 per plant on 2 acres of tobacco in Dinwiddie County; nearly all dead due probably to controls. (Allen). Generally light on tobacco to date in Pittsylvania County. (Dominick).

TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) - VIRGINIA - Increasing, but noneconomic on tobacco in Pittsylvania County. (Dominick).

SUGARBEETS

LYGUS BUGS (*Lygus* spp.) - WYOMING - Adults averaged 4 per 100 sweeps in Platte, Goshen, and Laramie Counties. (Parshall). ARIZONA - Averaged 25 per 100 sweeps at Kansas Settlement, Cochise County. (Ariz. Coop. Sur.).

SAY STINK BUG (*Ptilodactylus sayi*) - ARIZONA - Averaged 15 per 100 sweeps at Kansas Settlement, Cochise County. (Ariz. Coop. Sur.).

SWEETPOTATO FLEA BEETLE (*Chaetocnema confinis*) - COLORADO - Adults of this species and *Systema taeniata* ranged 10-150 per 100 sweeps at Longmont, Boulder County. (Johnson).

BELT ARMYWORM (*Spodoptera exigua*) - WYOMING - Larvae averaged 3 per 100 sweeps in Platte, Goshen, and Laramie Counties. (Parshall).

BEET WEBWORM (*Loxostege sticticalis*) - WYOMING - Larvae averaged 3 per 100 sweeps in Platte, Goshen, and Laramie Counties. (Parshall).

MISCELLANEOUS FIELD CROPS

A LEAF MINER FLY (*Melanagromyza splendida*) - ARIZONA - Pupae collected from stems of safflower May 17, 1968, at Yuma, Yuma County, and reared by D.M. Tuttle. Infestation light. Det. by G.C. Steyskal. This is a new State record. (Ariz. Coop. Sur.). First reported in the United States from California in CEIR 17(9): 136. (PPC).

TARNISHED PLANT BUG (*Lygus lineolaris*) - ALABAMA - Many adults and nymphs feeding on sunflower in all fields examined throughout State. (Halla et al.).

LINED SPITTLEBUG (*Neophilaenus lineatus*) - ALABAMA - Nymphs in spittle masses on developing heads and stems of most sunflowers in 40-acre field in Bullock County; also on grass, weeds, and other plants in this field. (Stone et al.).

POTATOES, TOMATOES, PEPPERS

Potato Aphids in Maine - Populations still generally light, except in early planted fields, on untreated potatoes in Presque Isle, Lee, and Houlton districts; all species averaged 22 per plant (3 leaves) in early planted field near Houlton. Little increase noted in fields bordering grain fields due to predators, especially lady beetles, in aphid-infested grain; no substantial increases elsewhere on potatoes, especially in early planted fields. Macrosiphum euphorbiae and Aphis nasturtii continue predominant, but Myzus persicae increased rapidly. Acyrthosiphon solani generally light. (Shands et al.).

GREEN PEACH APHID (Myzus persicae) - RHODE ISLAND - Heavy in unsprayed potato plots in Washington County; some aphids attacked by entomophagous fungi. (Kerr, Field). NEW YORK - Colonies forming rapidly on peppers during hot, dry weather of past period. (N.Y. Wkly. Rpt., July 15). DELAWARE - Increasing on peppers throughout State; numerous and feeding on potato foliage in Dover area. (Boys, July 18). Increased, averaged 2+ per leaf, on sweet peppers in Sussex County. (Burbutis).

POTATO APHID (Macrosiphum euphorbiae) - RHODE ISLAND - Heavy in unsprayed plots in Washington County. (Field). NEW HAMPSHIRE - Pink and green forms present on tomatoes and potatoes in Salem and Westmoreland July 9-10. (Sutherland).

BEAN APHID (Aphis fabae) - RHODE ISLAND - Heavy on unsprayed tomato plants in Washington County. (Field).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - MAINE - Larvae common on untreated potatoes in Lee district, but less abundant in Houlton district; spotty in some fields in central and northern Aroostook County. (Shands et al.). RHODE ISLAND - First-generation adults evident in unsprayed plots in Washington County. (Kerr, Field). MINNESOTA - Infested only 2 potato fields near Argyle in survey in Red River Valley from Wilkin to Kittson Counties. Economic in only one 6 to 7-acre field, larvae 5-8 per plant with damage quite severe. (Minn. Ins. Rpt.). COLORADO - Adults and larvae 0-3 per plant in Weld County. (Johnson). IDAHO - Larvae very abundant and causing extensive damage in unsprayed potato fields in Aberdeen area, Bingham County. All instars present, but very few adults and eggs. (Manis).

FALSE CHINCH BUG (Nysius ericae) - OKLAHOMA - Heavy on commercial tomatoes in Tulsa County; controls applied. (Okla. Coop. Sur.).

BLACK BLISTER BEETLE (Epicauta pennsylvanica) - MICHIGAN - Feeding begun on potatoes in northern Lower Peninsula. (Jones, July 15).

HORNWORMS (Manduca spp.) - VIRGINIA - Moderate in scattered tomato fields throughout Westmoreland County; some controls applied. (Ptucha, July 11).

PEPPER MAGGOT (Zonosemata electa) - NEW JERSEY - Total of 92 adults collected on 4 stickyboards at Cedarville July 11-17. (Ins.-Dis. Newsltr.).

BEANS AND PEAS

MEXICAN BEAN BEETLE (Epilachna varivestis) - GEORGIA - First-generation damaged lima beans in Spalding County. (Dupree, July 12). COLORADO - Adults 0-10 per 100 row feet in Weld and Boulder Counties; larvae active at Gilcrest, Weld County. (Johnson, Urano). WYOMING - Adults ranged 0-7 (average 3.3) per 100 row feet of beans in Goshen, Platte, and Converse Counties; eggs in all fields checked. Larvae found in one early planted field near Veteran, Goshen County. (Parshall). For Mexican Bean Beetle in Idaho see page 711.

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata undecimpunctata) - OREGON - Widespread on many wild and cultivated plants in Douglas County; damage extensive on pole beans when adjacent hay fields cut. (Passon).

FLEA BEETLES - COLORADO - Systema taeniata and Phyllotreta albionica adults 0-30 per 100 sweeps in Boulder and Weld Counties; feeding damage light to moderate. (Johnson).

GREEN CLOVERWORM (Plathypena scabra) - DELAWARE - Larvae increased to about 2 per 3 row feet on lima beans in some Sussex County fields. (Burbutis).

BEAN APHID (Aphis fabae) - RHODE ISLAND - Heavy on unsprayed bean plants in Washington County. (Field).

SPIDER MITES (Tetranychus spp.) - IDAHO - Small colonies of Tetranychus sp. on bean foliage at Kibberley, Twin Falls County; no severe damage. Field beans being treated. (Manis). CALIFORNIA - T. urticae medium on beans in Orland, Glenn County. (Cal. Coop. Rpt.).

COLE CROPS

IMPORTED CABBAGEWORM (Pieris rapae) - IOWA - Larvae very heavy, up to 27 per cabbage head, in Polk and Jasper Counties. (Iowa Ins. Sur.). MICHIGAN - Strong flights continue; outbreak numbers in general crop fields with abundant wild crucifers in some southwest areas. (Janes, July 15). VIRGINIA - Large larvae causing severe damage to cabbage in home gardens in Botetourt, Bedford, Sussex, Campbell, Greensville, and Southampton Counties. (Allen). NEW HAMPSHIRE - This species and Plutella xylostella light on crucifers in Litchfield, Hollis, and Winchester. (Sutherland).

CABBAGE LOOPER (Trichoplusia ni) - NEW HAMPSHIRE - First larvae of season in Westmoreland July 10. All instars currently damaging crucifers in southern area. (Sutherland). NEW JERSEY - Damaged many crucifer plantings in central and southern counties. (Ins.-Dis. Newsltr.). MICHIGAN - Two moths taken in blacklight trap in Newaygo County July 3; collection 10-14 days earlier than normal. (Janes, Newman).

CABBAGE MAGGOT (Hylemya brassicae) - NEW YORK - Some damage in cauliflower seed beds in Suffolk County. (N.Y. Wkly. Rpt., July 15).

A FLEA BEETLE (Phyllotreta albionica) - COLORADO - Adults 2,000-3,000 per 100 sweeps in radish at Longmont, Boulder County. (Johnson).

CUCURBITS

SQUASH BUG (Anasa tristis) - NEW MEXICO - Heavy on squash and related plants in Albuquerque, Bernalillo County; controls ineffective. (Heninger).

SQUASH BEETLE (Epilachna borealis) - SOUTH CAROLINA - Some heavy feeding on squash, cantaloup, and watermelon in State. (Thomas, July 9).

STRIPED CUCUMBER BEETLE (Acalymma vittatum) - MICHIGAN - Feeding decreased in cucumber fields in State. (Thompson, July 15). COLORADO - Up to 1 per cucumber plant at Longmont, Boulder County. (Johnson).

SQUASH VINE BORER (Melittia cucurbitae) - NEW YORK - Egg laying in progress on untreated squash and pumpkin in Ithaca area. (N.Y. Wkly. Rpt., July 15).

THRIPS - MICHIGAN - Banded species heavy, averaged 25-30 per leaf, on cucumbers in Allegan and Ottawa Counties; mostly nymphs. (Janes, July 15).

GENERAL VEGETABLES

SPOTTED CUTWORM (Amathes c-nigrum) - MICHIGAN - Adults continue above normal in all blacklight traps. Counts for period by county: Lenawee 34, Berrien 28, Montcalm 39, and Newaygo 26. (Janes, July 15).

CELERY LOOPER (Anagrapha falcifera) - MICHIGAN - Adults decreasing at all black-light stations. Some new emergence noted from first-brood "stragglers." Larvae will be problem remainder of season. (Janes, July 15).

GLASSY CUTWORM (Crymodes devastator) - MICHIGAN - Much lighter in blacklight traps than past 2 years. Adult counts for period by county: Lenawee 19, Berrien 12, Newaygo 8, and Montcalm 22. (Newman, July 15).

FALSE CHINCH BUG (Nysius ericae) - WASHINGTON - Damaged carrot seed crops at Quincy, Grant County. (Foepfel, July 12).

APHIDS - NEW JERSEY - Myzus persicae very abundant and troublesome on many crops from Bergen to Cape May Counties. Pemphigus bursarius damaged escarole in muck soil near Vienna, Warren County. (Ins.-Dis. Newsltr.).

ONION THRIPS (Thrips tabaci) - COLORADO - Ranged 0-20 per plant in Boulder and Weld Counties. WASHINGTON - All stages damaged onions at Othello, Grant County. (Landis, July 12).

CARROT WEEVIL (Listronotus oregonensis) - IOWA - Larvae damaged many garden carrot plantings in southwest, west-central, south-central, and central areas. (Iowa Ins. Sur.).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Carpocapsa pomonella) - CALIFORNIA - Medium on 10 acres of apple trees at Watsonville, Santa Cruz County. (Cal. Coop. Rpt.). WASHINGTON - First second-brood moth emerged in cage July 4 in Yakima County, 6 days earlier than in 1967. (Johnson). WISCONSIN - Trapped 7 in blacklight trap at Madison, Dane County. (Wis. Ins. Sur.). INDIANA - New entries and small second summer-brood larvae in apples at Vincennes. Adult activity decreasing; 43 males taken compared with 79 for previous period. (Dolphin, July 15). OHIO - First-generation adult emergence begun in Wayne County July 16. (Forsythe). NEW JERSEY - Second brood in many central and southern apple orchards. (Ins.-Dis. Newsltr.). NEW YORK - Continues light in eastern area despite favorable weather for increase. First-brood emergence 18 percent in cages in Monroe County. (N.Y. Wkly. Rpt., July 15).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - INDIANA - Third flight of season begun at Vincennes; moths common in unsprayed apple and peach orchards. (Dolphin, July 15). MISSOURI - Moderate on unsprayed peach in southern part of south-central area. (Wkly. Rpt. Fr. Grs., July 16). OREGON - Two males and one female in bait trap in untreated peach orchard at Phoenix, Jackson County. (Simmons). This is a new county record; also new for southern part of State. None detected in State since 1961 with find at Salem. Det. by F.P. Larson July 10. Emergence increasing in same orchard, averaged 2-3 moths per trap. Not yet found in other orchards. (Larson). WASHINGTON - Infested 2-5 percent of shoots July 5 at Moxee, Yakima County; first record of infestation in upper Yakima Valley. (Johnson).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - INDIANA - Adult activity light at Vincennes; sex lure trapped 69 males compared with 1,271 three weeks ago. (Dolphin, July 15). MICHIGAN - Hatch should be progressing normally; second-brood egg masses noted 2 weeks ago. (Wooley, July 15).

LESSER PEACH TREE BORER (Synanthedon pictipes) - INDIANA - Males (158) light in virgin female traps for second consecutive week at Vincennes orchard. Adult activity expected to increase in 1-2 weeks. (Dolphin, July 15). MICHIGAN - Moths

still emerging in Berrien County; many old pupae under bark. (Wooley, July 15).

APPLE MAGGOT (*Rhagoletis pomonella*) - NEW JERSEY - Adults increased sharply past period. Adult counts on 2 stickyboards each July 11-17 by county: Burlington 211, Mercer 101. (Ins.-Dis. Newsltr.). CONNECTICUT - Emergence in peak period in State. Captured 489 adults on 8 false apple lures at Storrs; 208 in other areas of State. (Savos, July 16). VERMONT - Adults on false apple lures at Springfield July 8, Burlington July 12, and at Dummerston July 15; peak emergence expected next week in most areas. (MacCollom). NEW YORK - Adult emergence heavy in eastern area. Emergence steady and moderately heavy in Monroe County; damage no longer seen as sour cherries ripen. Active only in abandoned orchards in Columbia County. (N.Y. Wkly. Rpt., July 15). INDIANA - Adults continue to increase on 2 stickyboards in abandoned Vincennes orchard; 627 taken to date. Some prepupae leaving foliage for pupation sites. (Dolphin, July 15). MICHIGAN - Gradually increasing to peak in emergence cages in Van Buren County. (Wooley, July 15). WISCONSIN - Adults began appearing at Sturgeon Bay July 6. Caught 103 on sticky apple in crab apple trees and 12 on 3 sticky apples in apple trees July 8-16 at Madison, Dane County. From July 10 to 15, also caught 103 at site in Shawano, Shawano County, 69 at Oregon, Dane County, and 52 at Baraboo, Sauk County. (Wis. Ins. Sur.). MINNESOTA - Generally light. Adults reported from North St. Paul, Preston, and Excelsior; negative at La Crescent and Rochester. (Minn. Ins. Rpt.).

APPLE APHID (*Aphis pomi*) - CONNECTICUT - Increased greatly on sucker and terminal growth in many apple orchards; remained light where suckers removed. (Savos, July 16). VERMONT - Common on new maple growth in State. (MacCollom). NEW HAMPSHIRE - Problem on water shoots or suckers where coverage poor at Hollis. (Sutherland).

APHIDS - ARIZONA - *Myzus persicae* averaged 300 per 100 sweeps in 480-acre peach grove at Elfrida, Cochise County. (Ariz. Coop. Sur.). WASHINGTON - *Dysaphis plantaginea* continued to reinfest new growth July 3, especially water sprouts, on trees scattered over extensive area in Yakima County. (Johnson). Alates of *Eriosoma lanigerum* and *E. crataegi* in flight July 3 in Yakima County. (Landis). GEORGIA - Light to heavy on Tift County pecans. (French, July 12).

PEAR PSYLLA (*Psylla pyricola*) - RHODE ISLAND - Empty exuviae, nymphs, and eggs on seriously damaged pear leaves in Providence County. (Stessel, Field). OREGON - Building up in commercial orchards after treatment in February. (Westgard).

A LARGID BUG (*Largus cinctus californicus*) - CALIFORNIA - Adults medium on leaves and fruit of apricot trees at Newcastle, Placer County. (Cal. Coop. Rpt.).

PEAR-SLEG (*Caliroa cerasi*) - WISCONSIN - Heavy damage to fruit trees and ornamental *Prunus* spp. in southeastern counties. (Wis. Ins. Sur.).

EUROPEAN RED MITE (*Panonychus ulmi*) - MISSOURI - On treated apple moderate to severe in southeast area, moderate in northeast area; moderate on sprayed and unsprayed peach in southeast and southern south-central areas. (Wkly. Rpt. Fr. Grs., July 16). IOWA - Less than one per leaf in treated apple orchards. Heavy, 30+ per leaf, in orchard at Pella; damage evident. (Iowa Ins. Sur.). INDIANA - Adults averaged 5.2, immatures 16.1, and eggs 134.8 per leaf in commercial apple orchard at Vincennes. (Dolphin, July 15). Increased rapidly in apple orchards in south-central district. Adults 2-11, immatures 1-3, and eggs 17-122 per leaf. (Huber). MICHIGAN - Increase continues on apple, prune, peach, and pear trees. (Wooley, July 15). OHIO - Adults and immatures on apple averaged about 11 per leaf in Miami County (Rose) and 4-5 per leaf on unsprayed foliage in Wayne County (Forsythe). MARYLAND - Heavy in many apple orchards at Hancock, Washington County. (U. Md., Ent. Dept.). NEW JERSEY - Becoming troublesome on apple in many blocks throughout State. (Ins.-Dis. Newsltr.). NEW YORK - Increasing to economic levels in Columbia County. Some increase in few orchards in Clinton County; some controls effective. (N.Y. Wkly. Rpt., July 15).

PEAR LEAF BLISTER MITE (*Eriophyes pyri*) - CALIFORNIA - Adults medium on leaves and fruit of apricot trees at New Castle, Placer County. (Cal. Coop. Rpt.).

WALNUT CATERPILLAR (*Datana integerrima*) - OHIO - Hatching; egg masses 3-5 per tree. Larvae on walnut and hickory trees throughout Morrow County July 1-11; destroyed about 5 percent of foliage on 50-75 percent of trees examined. Heavy for second consecutive year; will severely defoliate many trees. (Reutter).

FALL WEBWORM (*Hyphantria cunea*) - OKLAHOMA - Heavy on pecan trees in central, north-central, and northeast counties. Mostly 3-7 webs per tree; 35 webs on 60-foot pecan tree in Tulsa County. (Okla. Coop. Sur.).

CITRUS

Quarterly Citrus Insect and Mite Outlook in Florida - July through September - This outlook is based on the assumption that weather beyond the period of the current U.S. Weather Bureau 30-day outlook will be normal. Therefore, the forecasts given below cannot be viewed with the same degree of confidence as those in the "Insect and Disease Summary" usually released twice each month by this station.

CITRUS RUST MITE (*Phyllocoptruta oleivora*) expected to be in moderate to high range until mid-August, about normal for period. Will decrease to low level from mid-August to mid-September. Will heavily infest fruit in 15 to 20 percent of groves. TEXAS CITRUS MITE (*Eutetranychus banksi*) and CITRUS RED MITE (*Panonychus citri*) will decrease in July and hold at low level through September. Scattered infestations may become important in young groves. BLACK SCALE (*Saissetia oleae*) will remain abnormally high through July and contribute to heavy buildup of sooty mold. Adults will diminish in August but crawlers will become numerous. High mortality of young scales expected in September. An ARMORED SCALE (*Unaspis citri*) expected to spread and intensify. GLOVER SCALE (*Lepidosaphes gloverii*), PURPLE SCALE (*L. beckii*), CHAFF SCALE (*Parlatoria pergandii*), and YELLOW SCALE (*Aonidiella citrina*) expected to be at or below normal abundance and to decrease through September. MEALYBUGS will persist in moderate numbers until August and contribute to sooty mold buildup, then drop to low level. WHITEFLIES will decrease through August, increase in September. Nymphs will be in moderate numbers throughout period and add to sooty mold buildup. (W.A. Simanton).

YELLOW SCALE (*Aonidiella citrina*) - FLORIDA - Collected in Sumter County June 26, 1968, for new county record. (Fla. Coop. Sur.).

PURPLE SCALE (*Lepidosaphes beckii*) - FLORIDA - Collected in Sumter County June 26, 1968, for new county record. (Fla. Coop. Sur.).

COTTONY-CUSHION SCALE (*Icerya purchasi*) - CALIFORNIA - Medium on citrus at Afton, Glenn County; vedalia (*Rodolia cardinalis*) medium in area. (Cal. Coop. Rpt.).

CITRUS THRIPS (*Scirtothrips citri*) - ARIZONA - Treatments continue in nurseries and young groves to protect new growth cycle at Yuma, Yuma County. (Ariz. Coop. Sur.).

CITRUS FLAT MITE (*Brevipalpus lewisi*) - ARIZONA - Groves treated for fruit protection at Yuma, Yuma County. (Ariz. Coop. Sur.).

OTHER TROP. & SUBTROP. FRUITS

GREENHOUSE THRIPS (*Heliothrips haemorrhoidalis*) - CALIFORNIA - Nymphs and adults heavy on avocado trees at Pacific Beach, San Diego County; usually controlled by natural enemies. (Cal. Coop. Rpt.).

SMALL FRUITS

RASPBERRY CANE BORER (*Oberea bimaculata*) - NEW HAMPSHIRE - Egg laying wilted and killed canes at Durham. (Sutherland, July 15).

A LARGID BUG (Largus cinetus californicus) - CALIFORNIA - Adults heavy on bushberry foliage generally at Corte Madera, Marin County. (Cal. Coop. Rpt.).

ORNAMENTALS

BAGWORM (Thyridopteryx ephemeraeformis) - OKLAHOMA - Extensively damaged arbovitae in Comanche County. (Okla. Coop. Sur.). ALABAMA - Annual single generation heavy throughout northern area, less so in central area; occasional infestation in southern area on cedar trees, arbovitae, juniper, and other shrubs and shade trees. Some defoliated cedar and coniferous shrubs dead. (Priester et al.). TENNESSEE - Continued very damaging in many localized areas statewide. (Gordon, Williams).

LONG-TAILED MEALYBUG (Pseudococcus adonidum) - FLORIDA - Infested 500 Dracaena godseffiana and 17,500 of 35,000 hoyo plants at Apopka July 11-12. (Muscgrove).

ARMORED SCALES - FLORIDA - Diaspis boisduvalii infested 240 of 12,000 cattleya orchids July 7 at Lake Worth, Palm Beach County. (Wyles). WISCONSIN - Lepidosaphes ulmi numerous on ornamentals in many residential areas. (Wis. Ins. Sur.).

FLETCHER SCALE (Lecanium fletcheri) - MINNESOTA - Hatched; crawlers dispersed to arbovitae and taxus examined at Winona, Winona County. (Minn. Ins. Rpt.).

BLACK CITRUS APHID (Toxoptera aurantii) - FLORIDA - Infested about 17,500 of 35,000 hoyo plants July 12 at Apopka, Orange County. (Muscgrove).

PRIVET MITE (Brevipalpus obovatus) - CALIFORNIA - Medium on azalea nursery stock in Belmont, San Mateo County; now on wider range of hosts. (Cal. Coop. Rpt.).

FOREST AND SHADE TREES

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - TEXAS - Killed about 100 acres of pine timber in 6 infestations adjacent to Trinity River in Liberty County; heavy rains in June hampered salvage and controls. Killed 2,184 additional trees in national forests of State. Pine mortality in Angelina, Big Thicket, Tenaha, and Yellow-pine Districts. (Ollieu; For. Pest Activity Rpt., Apr.-June.).

BLACK TURPENTINE BEETLE (Dendroctonus terebrans) - TEXAS - Controls applied in Montgomery, San Jacinto, and Trinity Counties in Sam Houston National Forest. (Ollieu; For. Pest Activity Rpt., Apr.-June). ALABAMA - Heavy on several isolated large pines in Lee County; killed some shade trees. Killed group of 10-15 pines in street planting at Monroeville, Monroe County. (Daugherty et al.).

A BARK BEETLE (Pityophthorus pulicarius) - TEXAS - Caused heavy mortality of first-year pine cones in State Forest Service seed orchards. (Ollieu; For. Pest Activity Rpt., Apr.-June).

BLACK HILLS BEETLE (Dendroctonus ponderosae) - COLORADO - This and D. rouseotsugae increased noticeably in Larimer County last several years. (Thatcher, Wygant).

ENGRAVER BEETLES (Ips spp.) - TEXAS - Killed timber near Luftin, Angelina County. (Ollieu; For. Pest Activity Rpt., Apr.-June).

WHITE-PINE WEEVIL (Pissodes strobi) - RHODE ISLAND - Larvae caused extensive damage to Washington County white pine. (Kerr, Field).

FLATHEADED FIR BORER (Melanophila drummondii) - IDAHO - Adult emergence flight underway at Orofino, Clearwater County. (Fitzsimmons, July 12).

JACK-PINE BUDWORM (Choristoneura pinus) - WISCONSIN - Defoliation widespread and light to heavy in northern and central counties. Defoliation on decline in Douglas

and Bayfield Counties in late June. Pupation underway July 10 at Boulder Junction, Vilas County. Most moths emerged July 17 in Wood, Juneau, and Adams Counties; egg masses scarce but hatching good in those examined. Moths numerous in Juneau County; condition of moths varied, indicating prolonged emergence. (Wis. Ins. Sur.). MICHIGAN - Adults active in Oceana County pine plantations. (Wallner, July 15).

SPRUCE NEEDLE MINER (Taniva albolineana) - MICHIGAN - Abundant for second consecutive year throughout Lower Peninsula. (Hanna, July 15).

A GELECHIID MOTH (Exoteleia nepheos) - MICHIGAN - Adults collected from heavily infested Ottawa County plantations; stunting, browning, and "goosenecking" noted. Second report of species in State. (Wallner, July 15).

BAGWORM (Thyridopteryx ephemeriformis) - TEXAS - Heavy on spruce in Brazos, Hays, Travis, Guadalupe, and Williamson Counties. (Thomas, Herwald). NEW HAMPSHIRE - Mostly adults in State. (Conklin, Sutherland, July 15).

PINE SPITTLEBUG (Aphrophora parallela) - WISCONSIN - Adults numerous in Juneau County July 17; mating underway. (Wis. Ins. Sur.). NEW HAMPSHIRE - Mostly adults in State. (Conklin, Sutherland, July 15).

AN APHID (Cinara curvipes) - NEW HAMPSHIRE - Infested 10-30 percent of 10-acre balsam fir plantation at Lisbon, Grafton County; colonies up to 3 inches across on main stem. Few alates present. (Avery, Sutherland, July 11).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - WISCONSIN - Eggs of second generation 15 percent hatched on Rock County spruce. Of those crawlers emerged, 40 percent exposed on needles. Chemical controls should be effective late this period in southern zone. (Wis. Ins. Sur.).

SPRUCE BUD SCALE (Physokermes piceae) - MICHIGAN - Crawler activity just beginning on spruce in Ottawa County; should be completed in 10-14 days. (Wallner, July 15).

ELM LEAF BEETLE (Pyrrhalta luteola) - OREGON - Heavy on Chinese elms at Roseburg, Douglas County. Many larvae moving down tree trunks where controls neglected. Second brood expected by mid-July. Damage to American elm light compared to that on Chinese elm. (Passon). NEW MEXICO - Heavy on Siberian elms at Farmington, San Juan County. (Heninger). Generally heavy on all elms at Socorro, Socorro County. (Hare). TEXAS - Larvae, pupae, and adults in several counties of Trans-Pecos area. (Neeb). OKLAHOMA - Damage heavy on Siberian elms in Tulsa County; eggs, larvae, and adults present. Heavy on Cotton County elms. (Okla. Coop. Sur.). ALABAMA - First full-grown larval generation seriously damaged leaves and ornamental value of many elms at Auburn, Lee County. New growth on completely defoliated trees, but new larval generation appearing. (McQueen).

LARGER ELM LEAF BEETLE (Monocesta coryli) - ALABAMA - First infestation of year on Jefferson County elm. Destroyed 90 percent of leaves on 2 elms. (Granberry).

COTTONWOOD LEAF BEETLES (Chrysomela scripta complex) - TEXAS - Controls applied to 400-acre block of cottonwood in Walker County. (Texas Coop. Rpt.). DELAWARE - Damaged New Castle County poplars. (Boys, July 18).

IMPORTED WILLOW LEAF BEETLE (Plagioderia versicolora) - NEW JERSEY - Adults active on willow in Middlesex, Monmouth, Somerset, Union, and Bergen Counties. (Ins.-Dis. Newsltr.).

GREEN JUNE BEETLE (Cotinis nitida) - TENNESSEE - Adult emergence very heavy in most eastern and central areas. (Williams, Gordon).

MIMOSA WEBWORM (Homadaula anisocentra) - IOWA - On honeylocust trees in Fremont and Mills Counties for new county records. (Gunderson). OHIO - Larvae destroyed 30 percent of foliage on numerous honeylocust trees in Miami, Shelby, Champaign, and Union Counties. Mostly full-grown larvae, but some early instars. (Rose).

BOXFLYER LEAF ROLLER (Gracillaria negundella) - UTAH - Defoliated several hundred boxelder trees in Cache County from Richmond to northern State boundary: in mouths of Blacksmith Fork Canyon, Logan Canyon, Wellsville Canyon, and Providence and East Canyons in Cache County. (Roberts).

ARCTIID MOTHS - INDIANA - First Hyphantria cunea webs of season on hickory, walnut, and sycamore in southwest district: larvae averaged 0.25-inch long. (Huber).
NEW JERSEY - Halisodota harrisii larvae active on London planetrees at Parlin, Middlesex County. (Ins.-Dis. Newsltr.).

WESTERN TENT CATERPILLAR (Malacosoma pluviale) - OREGON - Many freshly emerged adults in blacklight trap July 10 at Florence, Lane County. (Westcott, Goeden).

UGLY-NEST CATERPILLAR (Archips cerasivoranus) - NEW HAMPSHIRE - Pupae in webs July 12, adults emerged July 15 at Durham, Strafford County.

SAWFLIES - Wisconsin - Fenusa pusilla larval damage extensive on ornamental birch; most reports from southeastern and eastern counties where birch numerous in lawns. Reports of damage from Vilas, Marathon, Price, Adams, and Crawford Counties. (Wis. Ins. Sur.). VERMONT - Second-generation activity of F. pusilla common on untreated birch. Pristiphora geniculata defoliated ash in most areas. (MacCollom).

ELM SAWFLY (Cimbex americana) - NORTH DAKOTA - Second instars damaged elm in shelterbelt near Hefftinger, Adams County; controls applied. (McBride).

SOFT SCALES - ALABAMA - Neolecanium cornuparvum heavy on 40-acre planting of selected magnolias grown for greenery cuttings on plantation near Evergreen, Conecuh County. Det. by G.W. Dekle. (Huggin). NEW HAMPSHIRE - Lecanium fletcheri crawlers active at Hooksett, Merrimack County. (Mason, July 15).

ARMORED SCALES - IOWA - Several hundred Lepidosaphes ulmi per inch of ash branch at Creston, Union County. (Iowa Ins. Inf., July 6). TEXAS - Pseudaulacaspis pentagona heavy on chinaberry near Angleton, Barzoria County. (Hubbard).

APPLE MEALYBUG (Phenacoccus aceris) - NEW YORK - Heavy on many dogwood trees at Ithaca and other areas of Tompkins County. Det. by H.L. McKenzie. (N.Y. Wkly. Rpt., July 15).

A SPIDER MITE (Eotetranychus multidigituli) - MICHIGAN - Defoliation severe on Moraine locust at nursery near Plymouth. (Hanna, July 15).

MAN AND ANIMALS

MOSQUITOES - SOUTH CAROLINA - Adults abundant in Clemson area. (Nettles, July 9). RHODE ISLAND - Culex spp. and Aedes spp. continue prevalent throughout State. (Field). MICHIGAN - Heavy and very annoying throughout State; favored by wet weather and flooding. Culex pipiens, C. tarsalis, Psorophora ciliata, and Aedes sp. present in area; A. vexans annoying in evenings. (Jones, July 15). WISCONSIN - Continue common in most areas. Annoyance expected to continue at present level for at least 3 weeks unless weather becomes cool or windy. Many shallow pools remain from heavy June rains; problem unlikely to subside. Annoyed cattle in many areas. (Wis. Ins. Sur.). MINNESOTA - Larvae practically non-existent in breeding sites in Minneapolis and St. Paul area July 7-13; rains resulted in 2 heavy broods, first now pupating. Controls in progress on breeding sites in area. Light trap collections for week ending July 7 probably will be peak for year; 70,000 taken in 16 traps. Of 55,000 females, 51,000 were A. vexans. Mansonia perturbans second with 870 females. A. vexans dominant with A. cinereus, A. sticticus, and A. trivittatus present in 1,077 five-minute day-time bite collections; averaged 11 per 5-minute collection. Averaged 20 per collection in 38 evening bite collections; A. vexans dominant; M. perturbans present in some collections. Some reports of ineffective control in municipal adult control programs. (Minn. Ins. Rpt.). IOWA - Situation serious in most of State. A. vexans abundant, 3 to 5 bites per minute common in residential areas. Egg rafts of C. pipiens and larvae of C. tarsalis more common than usual for time of year. (Iowa Ins. Inf., July 6). UTAH - Extremely numerous and annoying in Allen Canyon, numerous at Monte Cristo, Rich County; in mountains south of Monte Cristo in Weber County; and in Blacksmith Fork and Logan Canyons and Franklin Basin, Cache County. Troublesome in Delta, Deseret, Sugarville, Abraham, and Hinckley in Millard County. (Roberts).

SCREW-WORM (Cochliomyia hominivorax) - Total of 121 cases reported in U.S. July 7-13 as follows: TEXAS - Atascosa 9, Bee 5, Brewster 1, Brooks 5, De Witt 6, Duval 2, Edwards 2, Goliad 1, Kleberg 6, Gonzales 1, Guadalupe 1, Hidalgo 3, Jim Hogg 5, Jim Wells 8, Karnes 6, Kenedy 5, Live Oak 6, McCulloch 1, McMullen 3, Medina 3, Nueces 3, Pecos 1, Presidio 1, San Patricio 2, Starr 10, Terrell 1, Uvalde 5, Val Verde 2, Wilson 2, Zavala 4, Sterling 1; ARIZONA - Cochise 1, Graham 1, Maricopa 1, Pima 1, Pinal 2, Yuma 3; NEW MEXICO - Hidalgo 1. Total of 324 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Baja California 5, Territorio sur de Baja California 37, Sonora 68, Chihuahua 38, Coahuila 88, Nuevo Leon 42, Tamaulipas 46. Total of 31 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 78,844,000; New Mexico 400,000; Arizona 16,460,000; California 1,420,000; Mexico 54,744,000. (Anim. Health Div.).

FACE FLY (Musca autumnalis) - GEORGIA - Collected from beef cattle in Heard County June 24, 1968. Det. by J.B. Wallace. This is a new county record. (Nolan). NEW JERSEY - Becoming troublesome on many Burlington County dairy herds. (Ins.-Dis. Newsltr.). OHIO - Increased greatly on cattle. Averaged 30 per face on herd of mixed dairy cattle in Champaign County; tightly clustered groups of animals noted in other locations through west-central area. (Rose). INDIANA - Continues serious problem throughout State. Ranged 11-62 per face on all pastured cattle checked in southwest, south-central, and west-central districts. (Huber). ILLINOIS - Average per head by district: Southeast 3, west 5, southwest 23, northwest 5, and west-southwest 29. (Ill. Ins. Rpt.). WISCONSIN - Light to moderate annoyance to cattle reported from most areas. (Wis. Ins. Sur.). MISSOURI - Averages per head on 6 central area herds: 2.6, 8.0, 8.9, 4.0, 5.1, and 2.0. (Thomas). NORTH DAKOTA - Light, up to 5 (average 1 or less) per face, on beef herds in Dickey, McIntosh, Logan, Burleigh, Stutsman, and Grand Forks Counties. All but Stutsman new county records. (Brandvik). NEBRASKA - Averaged about 10 per head on herd near Lincoln, Lancaster County. (Campbell, July 14). IDAHO - Adults ranged 2-40 (average 14) per face on untreated pastured cattle in Boundary County. Populations very low or non-existent in southeastern area July 1-4. (O'Keefe, July 12). OREGON - Averaged

10-15 per face on 2 herds totaling 290 head in Tygh Valley, Wasco County. Cattle sprayed week of July 9. Animals' eyes watering excessively. (Brown). CALIFORNIA - Medium on cattle in White Rock, Del Norte County, for new county record. (Cal. Coop. Rpt.).

HORN FLY (*Haematobia irritans*) - IDAHO - Averaged 75-250 per side on Boundary County herd of pastured cattle and ranged from few to 175 per side on cattle July 1-3 in southeastern area. (O'Keefe). UTAH - Becoming conspicuous on untreated cattle at Delta and Hinkley, Millard County. (Roberts). NORTH DAKOTA - Ranged 75-250 (average 150) per head on beef herds in Cass, Dickey, McIntosh, and Logan Counties. Heavy, 1,000+ per head, on several bulls. Populations expected to increase as season progresses. (Brandvik). SOUTH DAKOTA - Heavy, 150-200 per side, on untreated cattle in Lake and Brookings Counties. (Kantack). NEBRASKA - Averaged 400 per head on range cattle at Scotts Bluff experiment station. (Hagen). KANSAS - Averaged 200 per head on cattle treated 3 weeks ago in Ellis County. (Harvey). MISSOURI - Averages per head on 6 central area herds: 240, 384, 170, 240, 143.5, and 482.5. (Thomas). MISSISSIPPI - Averages per head by county: Washington 40 each on 200 head; Hinds 22 on 189; and Yazoo 100 on 150 head. (Dinkins). ILLINOIS - Average per head by district: Southeast 558, west 61, southwest 148, northwest 50, and west-southwest 152. (Ill. Ins. Rpt.). OHIO - Averaged about 100 per head on sides and flanks of cattle in herd in Champaign County. (Rose). WISCONSIN - Light to moderate annoyance to cattle reported from most areas. (Wis. Ins. Sur.).

STABLE FLY (*Stomoxys calcitrans*) - WISCONSIN - Moderately annoyed cattle in most areas; annoyance severe in Chippewa and Calumet Counties. Expected to increase if present warm trend continues. (Wis. Ins. Sur.). ILLINOIS - Average per head by district: Southeast 6, west 1, southeast 29, and west-southwest 29. (Ill. Ins. Rpt.).

TABANID FLIES - RHODE ISLAND - *Tabanus* spp. increasing in Providence and Washington Counties. *Chrysops* spp. adults numerous and annoying in Washington County. (Field). MISSISSIPPI - *Tabanus* spp. averaged 2 per head on 200 cattle in Washington County. (Dinkins). OKLAHOMA - *Tabanus* spp. counts down in east-central counties. (Okla. Coop. Sur.). WISCONSIN - Deer flies continue bothersome in many areas. (Wis. Ins. Sur.). UTAH - *Tabanus* spp. and *Chrysops* spp. caused some annoyance to livestock on rangeland in Oak Creek Canyon, Millard County. (Roberts).

LONE STAR TICK (*Amblyomma americanum*) - OKLAHOMA - Larval counts high in east-central counties; averaged 100 per 25-foot drag; few adults. (Okla. Coop. Sur.). CONNECTICUT - Unusually abundant in some parts of State. (Savos, July 17).

BROWN RECLUSE SPIDER (*Loxosceles reclusa*) - OKLAHOMA - Present in Ellis County dwelling. (Okla. Coop. Sur.). ALABAMA - Additional specimen collected from bed springs in Colbert County home. (Baswell). GEORGIA - First known field population found in partly decayed log in Pike County. This is a new county record. (Snoddy, July 12).

MISCELLANEOUS WILD PLANTS

A CICADA (*Tibicen canicularis*) - ARIZONA - Heavy emergence throughout Salt River Valley, Maricopa County, causing much concern week ending July 5. (Ariz. Coop. Sur.).

AN APHID (*Aphis ceanothi*) - CALIFORNIA - Heavy on *Ceanothus cuneatus* generally in Junction City, Trinity County. (Cal. Coop. Rpt.).

STORED PRODUCTS

INDIAN-MEAL MOTH (*Plodia interpunctella*) - IOWA - Infested 3,000 bushel bin of shelled corn at Waukon, Allamakee County. Controls applied. (Iowa Ins. Inf., July 6).

POTATO TUBERWORM (*Phthorimaea operculella*) - MISSISSIPPI - Heavy in Jeff Davis County stored potatoes. (Dinkins).

BENEFICIAL INSECTS

LADY BEETLES - WYOMING - Averaged 43 per 100 sweeps in alfalfa in Converse, Platte, Goshen, Niobrara, and Laramie Counties. (Parshall).

MELYRID BEETLES (*Collops* spp.) - ARIZONA - Averages per 100 sweeps: 150 on sorghum at Lehi, Maricopa County; 50 on cotton in Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

DAMSEL BUGS (*Nabis* spp.) - WYOMING - Averaged 28 per 100 sweeps in alfalfa in Converse, Platte, Goshen, Niobrara, and Laramie Counties. (Parshall). ARKANSAS - Very light; only occasionally noted. (Boyer).

A FLOWER BUG (*Orius insidiosus*) - ARKANSAS - Heavier in Lafayette County than in Jefferson County; adults 13 and nymphs 1 per 10 row feet highest count, adults 5 and nymphs 5 per 10 row feet next highest count. Abundant in grain sorghum in bloom; adults 44 and nymphs 18 per 10 row feet. Lighter in prebloom than in postbloom sorghum. Adults and nymphs ranged 15-20 per 25 sweeps in light blooming alfalfa and 90-100 per 25 sweeps in heavy blooming alfalfa. (Boyer).

MINUTE PIRATE BUGS (*Orius* spp.) - ARIZONA - Averaged 40 per 100 sweeps on sorghum at Bowie, Cochise County. (Ariz. Coop. Sur.).

AN ICHNEUMON WASP (*Collyria calcitrator*) - NEW YORK - Collected on currant stem girdler (*Janus integer*) in currant planting in Fredonia, Chautauqua County, May 1967, by E.F. Taschenberg. Det. L.M. Walkley. This is a new State record. (N.Y. Wkly. Rpt.). This parasite of *Cephus cinctus* (wheat stem sawfly) has been introduced into Canada and the United States from Europe. As far as can be determined, *J. integer* is a new host record for this species. (PPC).

HONEY BEE (*Aphis mellifera*) - OHIO - Weather conditions past spring and early summer particularly favorable for swarming. Early warm weather until time of first nectar flow favored colony buildup. Extended cold spell that followed favored preparation for swarming and succeeding warm weather found many colonies casting generally fair-sized swarms. (Stephen). RHODE ISLAND - Continues to swarm in Providence County. (Relli).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BOLL WEEVIL (*Anthonomus grandis*) - TEXAS - Traps checked in El Paso area with negative results during June; 95 traps in operation. Placement of additional traps down Rio Grande to Ruidosa planned. Additional traps to be placed in High Plains area. Efforts will be made to coordinate catches with field inspection to determine whether this means of survey can be used as guide for control. (PPC South. Reg.). For Boll Weevil in other areas see pages 696-697.

CARIBBEAN FRUIT FLY (*Anastrepha suspensa*) - FLORIDA - Continues heavy in McPhail traps in Tampa area. Many reports received of larvae infesting mango from southern part of State; guava beginning to ripen with few reports of large infestation in same area. (Fla. Coop. Sur.).

CIBICID LAF BEETLE (*Oulema melanopus*) - PENNSYLVANIA - Found for first time in Indiana, Warren, and Westmoreland Counties. This makes total of 13 counties found infested during 1968. (PPC Eastern Reg., June Rpt.). ILLINOIS - Total of 3,476 fields inspected during June. Found for first time in Grundy, Livingston, Champagne, and Moultrie Counties. INDIANA - Found for first time in Jefferson, Switzerland, Ohio, Jackson, Brown, and Monroe Counties. KENTUCKY - Survey conducted throughout June. New records were Boyd, Bracken, Fayette, Fleming, Gallatin, Greenup, Lawrence, Lewis, Mason, Oldham, Robertson, and Scott Counties for total of 14 counties. OHIO - Positive find made in Cuyahoga County, a new county record. MICHIGAN - Population dynamics survey indicated large population increase throughout Lower Peninsula. Counts very heavy in Berrien, Jackson, Allegan, and Shiawassee Counties; ranged 3,000-6,000 per 100 sweeps. Beetles easily collected in upper portion of Lower Peninsula. None found during June in Upper Peninsula. (PPC, Cent. Reg.). Summer adult feeding moderate to heavy on late planted field corn. Feeding appreciable in only one cornfield (Berrien County) during survey from Jackson to New Buffalo; most feeding 7-10 days old. Damage to grain almost over in State. (Jones, July 15). Survey negative in Upper Peninsula in 1968. Total of 150,000+ sweeps made in oats June 24 to July 12 in Chippewa, Delta, Mackinac, and Schoolcraft Counties. (Hanna).

CITRUS BLACKFLY (*Aleurocanthus woglumi*) - TEXAS - Annual survey in Brownsville, Cameron County, completed June 28. More than 2,000 trees inspected with no suspicious findings. Surveys of commercial groves and residential properties conducted in Hidalgo County; results negative. (PPC South. Reg.).

FORMOSAN SUBTERRANEAN TERMITE (*Coptotermes formosanus*) - LOUISIANA - Winged forms found on concrete steps of home at Raceland, Lafourche Parish, May 21, 1968, by W.T. Spink. Det. by D.R. Smith. This is a new parish record. Source of infestation not found, although winged forms collected in light trap during June. Winged forms taken in traps at New Orleans during June at 2 locations approximately 3 miles east of previously known infested area. Swarming season about over in this area. TEXAS - Collected in residence at Beaumont, Jefferson County, June 11, 1968, by J.F. Ellard and J.H. Trammell. Det. by D.R. Smith. This is a new county record. Positive specimens collected from traps in Galveston and from traps located at Platzers Shipyard and San Jacinto Sewerage Treatment Plant in Houston. (PPC South. Reg.).

GRASSHOPPERS - NEW MEXICO - Generally light in Catron and Socorro Counties. (Hare). New hatch noted from recent rains in Quay, De Baca, and Guadalupe Counties. (Mathews, Nielsen). COLORADO - *Melanoplus* spp. nymphs 4-5 per square yard on carrots at Hudson, Weld County. (Johnson). UTAH - Numerous and spotty on second-crop alfalfa in western Millard County. *M. bivittatus* and *M. sanguinipes* 5 percent winged. Meadow grasshoppers very numerous in one meadow area near Delta. (Roberts). NEVADA - Grasshoppers heavy in waste areas and on ditch banks in Lyon County; no damage to date. (Batchelder). Counts per square yard averaged up to 5 in cultivated areas and ranged 1-3 on rangeland in Diamond Valley, Eureka County. (Gallaway, Martinelli). IDAHO - *Oedaleonotus enigma* and *Aulocara ellioti* averaged 6-25 per square yard on 7,000 acres in Mayfield, Elmore County, July 6-12; mating noted second week of June. Ranged 3-15 per square yard on 8,000 acres in Pothole Creek area south of Glenns Ferry, Elmore County; first adults noted second week of June. (Evans). MONTANA - Large number of nymphs present in Yellowstone and southern Rosebud Counties during June but caused no concern due to excellent condition of grass stands. Grasshoppers economic on 250,000 acres of rangeland last 2 weeks of June; mostly *Melanoplus sanguinipes* moderate to heavy in Toole, Hill, Yellowstone, Sanders, Rosebud, and Stillwater Counties. (PPC West. Reg.). NORTH DAKOTA - Grasshoppers noneconomic in south-central district. Counts per square yard ranged up to 18 (average 7) in margins and up to 10 in fields in some Burleigh County alfalfa; up to 12 in margins and up to 8 (average 1-2) in fields and margins in Morton County. Nymphal development ranged from first through fourth instar with mostly second and third instars. *M. sanguinipes*, *M. bivittatus*, *M. packardii*, *M. femurrubrum*, and *M. keeleri* dominant. (Toczek). MINNESOTA - *M. femurrubrum* hatch heavy; first instars up to 45 per square yard along roadsides and in some alfalfa fields in southwest, south-

central, central, and west-central districts; first, second, and third instars also evident. M. differentialis third and fourth instars 7 per square yard in Kandiyohi and Chippewa Counties. Moving into soybeans and corn, but lush growth in roadside ditches slowed migrations. Damage along margins most apparent in soybeans. (Minn. Ins. Rpt.). SOUTH DAKOTA - Remained light to threatening in western areas. Third instar to adult M. bivittatus and first to fifth instar M. differentialis found in Elk Creek Valley near Piedmont, Meade County. Counts per square yard mostly 8-10 in alfalfa fields and 20-30 in margins. Populations and development similar along Cheyenne River in eastern Custer County and along Wounded Knee Creek near Manderson, Shannon County. Counts per square yard ranged up to 15 along roadsides near Oglala, Shannon County; 12 in alfalfa near Allen and Martin, Bennett County; up to 40 along alfalfa margins near Wanblee, Washabaugh County; and mostly, 15 (high) near margins north of Quinn and Wall, Pennington County. Mostly A. deorum and Trachyrachys kiowa up to 35 per square yard in weedy creek bottoms on rangeland between Oglala and Manderson, Shannon County. (Burge, Zimmerman). Development later, (mostly first to third instars) in Brown and Spink Counties than in southwestern area. (Burge). KANSAS - Variable in most sections of western area. Population local and isolated, up to 25 per square yard along some roadsides, fence rows, and field margins. Heaviest in Wallace, Greeley, Wichita, and Hamilton Counties. High numbers mostly limited to weedy and grassy areas that remained green; little or no damage to crops. Adults 35-50 percent of population in most areas. Melanoplus sanguinipes, M. femurrubrum, M. lakinus, M. bivittatus, M. packardii, and Ageneotettix deorum predominant. (Simpson).

GRASS BUGS - UTAH - Labops utahensis and Irbisia spp. numerous and discoloring giant ryegrass on range 8 miles south of Monte Cristo, Weber County. (Roberts).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - MISSISSIPPI - Approximately 27,950 acres surveyed in 5 counties during June. Found for first time at Durant, Holmes County. This is a new county record. SOUTH CAROLINA - Found along Interstate Highway 20 in western Kershaw County. This is a new county record. (PPC South. Reg., June Rpt.).

JAPANESE BEETLE (Popillia japonica) - ALABAMA - Established infestations found at Fort Payne, De Kalb County, and at Opelika, Lee County, during June. These are new county records. Traps being placed to delimit infestations. Approximately 50 beetles collected at Fort Payne, 24 at Opelika. In entire Jefferson County area, 17 beetles collected. At Irondale infestation 3 beetles trapped and 12 caught during visual survey. Two collections made outside known infested area. (PPC South. Reg.). GEORGIA - Adults feeding on various ornamental plants in Hall, Jackson, and Stephens Counties. (Coleman, July 12). SOUTH CAROLINA - Peak apparently reached by July 17 as less numerous on sprayed ornamentals and apple orchards in Lexington County; heavy on roses. Collected in city of Lancaster, Lancaster County, June 25, 1968, by F.W. Cannon. Det. by R.D. Gordon. This is a new county record. (Nettles). TENNESSEE - Trapped on Fort Campbell Air Force Base, Montgomery County. (Coppinger). VIRGINIA - Adults, 100 per 100 sweeps, feeding on red clover in Prince Edward County. (Allen). Adults 15-20 per 100 row feet in 5-acre peanut field in Southampton County; damage light to moderate. Adults 50-60 per 100 row feet and feeding in 25-acre soybean field in Sussex County. (Allen). More abundant than usual in several sections of Pittsylvania County; damaging in home orchards and to ornamentals. (Dominick). Moderate to heavy throughout Westmoreland County; especially troublesome on ornamentals. (Ptucha, July 11). MARYLAND - Adults continue to feed on soybeans in southern area; infestations generally light to medium. (U. Md., Ent. Dept.). RHODE ISLAND - Heavy in Jamestown, Newport County. (Chaves). NEW HAMPSHIRE - First adults of season at Manchester July 9, Salem and Westmoreland July 10. Adults increasing in Nashua and Manchester. (Mason).

MEXICAN BEAN BEETLE (Epilachna varivestis) - IDAHO - One adult and one egg mass found in adjacent bean fields at Rupert, Minidoka County, during survey July 16. Additional surveys planned. (Butcher). For Mexican Bean Beetle in other areas see pages 695 and 699.

MEXICAN FRUIT FLY (*Anastrepha ludens*) - TEXAS - Inspections for larvae in Hidalgo and ~~Maricopa~~ ~~Counties~~ ~~negative~~ during June. (PPC South. Reg.). ARIZONA - Trapping continued during June in Pima and Santa Cruz Counties; no suspicious specimens recovered. (PPC West. Reg.).

PINK BOLLWORM (*Pectinophora gossypiella*) - ARKANSAS - Blacklight trap and sex lure trap results negative during June. FLORIDA - Traps in farming area at Homestead, Dade County, inspected with negative results. LOUISIANA - Lure traps in De Soto Parish inspected, no moths recovered. MISSISSIPPI - Blacklight trap in Greenwood, Leflore County, checked several times but no moths recovered. TEXAS - Bloom inspections negative in Brooks, Bee, Cameron, Dimmit, Maverick, Zavala, Hidalgo, Starr, Webb, and La Salle Counties. Infestations found in Caldwell, Karnes, and El Paso Counties. Surveys negative in Port Lavaca, San Antonio, and Rosenberg areas. At Waco, 16 moths taken from sex lure traps. (PPC South Reg.). NEW MEXICO - Collected in sex lure traps July 12 and July 15, respectively as follows: Canutillo, 18 and 7 in 5 traps; Anthony, none either day in 5 traps; Vado, 0 and 2 in 6 traps; Leasburg, none either day in 5 traps. Total of 36 moths taken in 10 traps in extreme southern Dona Ana County June 15-17. (Adams). Blooms on 1,500 row feet checked at 18 locations in Dona Ana County; 3 larvae found in one location in extreme southern part of county, no larvae in other locations. (Eubank et al.). ARIZONA - First instars and some more advanced larvae in short staple cotton blooms at Goodyear, Tempe, and Mesa in Maricopa County. Many fields being treated. Infested 10 percent of fields and 20-30 percent of hard bolls in some Yuma County fields. (Ariz. Coop. Sur.). Limited field surveys and reports indicate infestation much lighter in central part of State than at same time in 1967. CALIFORNIA - Visual surveys of early blooming fields in Imperial County indicated larvae per acre ranged from 2,000 in Holtville district to 400 north to Niland and south to Calexico. Larvae ranged 10-100 per acre on west side of Imperial County. Moths in light traps totaled 2,294 in Imperial Valley and 26 in Bard Valley. First rosetted bloom found June 3 in Palo Verde Valley, Riverside County. Bloom inspection indicated larvae ranged 10-50 per acre. Total of 725 moths taken in sex lure traps. In Coachella Valley, 11 of 95 fields checked found lightly infested. Moth recovery totaled 3 for June. Inspection and trapping negative in Kern County. Inspection of traps north of Kern County negative for month. (PPC West. Reg.).

RANGE CATERPILLAR (*Hemileuca oliviae*) - NEW MEXICO - Observations during June in Colfax, Harding, and Union Counties revealed very few larvae. Surveys in Lincoln County negative. (PPC West. Reg.).

SOYBEAN CYST NEMATODE (*Heterodera glycines*) - MISSISSIPPI - Collected for first time in Washington County. (PPC South. Reg., June Rpt.). VIRGINIA - Fifteen new infestations found in city of Virginia Beach. (PPC East. Reg., June Rpt.).

WHITE-FRINGED BEETLES (*Graphognathus* spp.) - TENNESSEE - Found in Union City, Obion County, for new county record. (Stafford, July 12). SOUTH CAROLINA - First report of damage to soybeans in Dorchester County; infestations much heavier than previously suspected. (Nettles, July 17).

INSECT DETECTION

New State Records

BEAN FLY (Melanagromyza phaseoli) (Tryon) - HAWAII - Larvae and pupae on snap beans June 19, 1968, at Waiahole, Oahu, June 21 at Kapaa, and July 15 at Wailua, Kauai. Reared and collected by G. Funasaki and B. Kumabe. Det. by G. C. Steyskal. This is also a new Western Hemisphere record. (p. 715).

A LEAFHOPPER (Allygus mixtus) - OREGON - In blacklight trap in cornfield at Canby, Clackamas County, in August 1967. Det. by P. Oman. (p. 692).

A LEAF MINER FLY (Melanagromyza splendida) - ARIZONA - Pupae collected from safflower May 17, 1968, at Yuma, Yuma County, and reared by D.M. Tuttle. Det. by G.C. Steyskal. (p. 698).

AN ICHNEUMON WASP (Collyria calcitrator) - NEW YORK - Collected on currant stem girdler (Janus integer) at Fredonia, Chautauqua County, May 1967, by E.F. Taschenberg. Det. by L.M. Walkley. (p. 709).

New County and Parish Records

ALFALFA WEEVIL (Hypera postica) - MISSOURI - Schuyler County. WISCONSIN - Grant County. SOUTH DAKOTA - Tripp County. (p. 693). OREGON - Polk County. (p. 694).

MEADOW SPITTLEBUG (Philaenus spumarius) - VIRGINIA - Dinwiddie County. (p. 694).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - OREGON - Jackson County. (p. 701).

YELLOW SCALE (Aonidiella citrina) - FLORIDA - Sumter County. (p. 703).

PURPLE SCALE (Lepidosaphes beekii) - FLORIDA - Sumter County. (p. 703).

MIMOSA WEBWORM (Homadaula anisocentra) - IOWA - Fremont and Mills Counties. (p. 705).

FACE FLY (Musca autumnalis) - GEORGIA - Heard County. NORTH DAKOTA - Dickey, McIntosh, Logan, Burleigh, and Grand Forks Counties. (p. 707). CALIFORNIA - Del Norte County. (p. 708).

BROWN RECLUSE SPIDER (Loxosceles reclusa) - GEORGIA - Pike County. (p. 708).

CEREAL LEAF BEETLE (Oulema melanopus) - PENNSYLVANIA - Indiana, Warren, and Westmoreland Counties. ILLINOIS - Grundy, Livingston, Champaign, and Moultrie Counties. INDIANA - Jefferson, Switzerland, Ohio, Jackson, Brown, and Monroe Counties. KENTUCKY - Boyd, Bracken, Fayette, Fleming, Gallatin, Greenup, Lawrence, Lewis, Mason, Oldham, Robertson, and Scott Counties. OHIO - Cuyahoga County. (p. 710).

FORMOSAN SUBTERRANEAN TERMITE (Coptotermes formosanus) - LOUISIANA - Lafourche Parish. TEXAS - Jefferson County. (p. 710).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - MISSISSIPPI - Holmes County. SOUTH CAROLINA - Kershaw County. (p. 711).

JAPANESE BEETLE (Popillia japonica) - ALABAMA - De Kalb and Lee Counties. SOUTH CAROLINA - Lancaster County. (p. 711).

SOYBEAN CYST NEMATODE (Heterodera glycines) - MISSISSIPPI - Washington County. (p. 712).

WHITE-FRINGED BEETLES (Graphognathus spp.) - TENNESSEE - Obion County. (p. 712).

WEATHER OF THE WEEK ENDING JULY 22

HIGHLIGHTS. Typical summer weather continued over most of the Nation -- hot and humid with widely scattered heavy thunderstorms. Temperatures in the East returned to comfortable levels over the weekend.

PRECIPITATION: Scattered thundershowers occurred from the Rocky Mountains to the Atlantic Coast being especially numerous and heavy early in the week from the central Great Plains to the Ohio River Valley. Heavy downpours hit northeastern Kansas and southeastern Nebraska late Monday and early Tuesday with some spots receiving 6 to 9 inches of rain. Torrential rains fell in northeastern Iowa when many stations recorded totals ranging from 5 to nearly 15 inches. The heaviest amounts fell in the Waterloo area. Strasburg, Ohio, registered 3.40 inches in 1 hour on Tuesday. On Wednesday, tornadoes touched down and numerous funnel clouds were seen at scattered localities from Kansas to Wisconsin. Convective showers occurred almost daily from Alabama to New England in the hot humid air mass that lay over the East. Amounts ranged widely from light sprinkles to over 3 inches with widely scattered spots receiving larger totals. Scattered thunderstorms occurred in New England on the 17th and 19th, some being accompanied by damaging lightning, wind, and soil-washing rains. The cold front passage provided a rainless weekend in the East. Widely scattered showers continued in the Deep South, however. A vigorous system moved into the Far Northwest on the 19th, accompanied by strong gusty winds. In general, very little rain fell from the Pacific Ocean to the western edge of the Great Plains. California, Nevada, and southern Oregon received no significant rain during the week.

TEMPERATURE: Hot humid weather continued over the eastern half of the Nation early in the week as moist tropical air moved northward from the Gulf of Mexico behind a warm stationary dome of high pressure. Afternoon temperatures soared to the 90's on several days. Waltham, Massachusetts, registered 100° on Tuesday afternoon when temperatures in portions of the Great Plains reached 100° or higher. 110° at Healy, Kansas. Temperatures over Lower Michigan ranged from the 70's in the early morning to the 90's on several afternoons. After about a week of the torrid temperatures, a cold front passage brought a delightfully comfortable weekend to the East. Temperatures averaged below normal from Washington and Oregon to the western edge of the Great Plains and from New Mexico to the Carolinas and above normal over the rest of the Nation. The Great Lakes region and the Northeast averaged 4° to 8° warmer than normal. (Summary supplied by Environmental Data Service, ESSA.)

CORRECTIONS

CIIR 18(28):634, 639, 640, 642:(29):667, 672 - All *Systema* *blanda* notes for Colorado should read A FLEA BEETLE (*Systema taeniata*). (Col. Ins. Sur.).

CIIR 18(28):645 - JACK-PINE BUDWORM (*Choristoneura pinus*) - WISCONSIN - ... Bayfield, and Washington Counties ... should read Bayfield, and Washburn Counties. (Wis. Ins. Sur.).

CIIR 18(28):646 - PERIODICAL CICADAS ... TENNESSEE - M. septendecim damaged catalpa trees in Knox County ... should read Reported from Knox County.

CIIR 18(29):672 - WESTERN POTATO FLEA BEETLE (*Epitrix suberinata*) - COLORADO - ... should read A FLEA BEETLE (*Phyllotreta albionica*) ... (Col. Ins. Sur.).

HAWAII INSECT REPORT

New State Record - Severe infestation of BEAN FLY (Melanagromyza phaseoli (Tryon)) larvae and pupae found on snap bean stems at Waiahole, Oahu, on June 19, 1968; at Kapaa June 21 and Wailua July 15 on Kauai. Found by G. Funasaki and B. Kumabe. Adults reared from specimens collected at Waiahole and Kapaa determined by G.C. Steyskal. This insect is well known and serious pest of snap beans and an important pest of lima beans, soybeans, and cowpeas. Distribution includes Egypt and several countries south of the Equator in Africa as well as eastern India, Burma, Malaysia, Ceylon, Singapore, Indonesia, New Guinea, China, the Philippines, Mauritius, Malagasy Republic, Australia, New Zealand, Guam, and Samoa. (Funasaki). M. phaseoli frequently causes total loss of the bean crop in numerous tropical and subtropical countries. The pest is largely responsible for restricting the bean-growing season in Australia to the cooler months and may even cause serious losses if the winter is mild. This fly is the most important pest of beans in New South Wales. Up to 100 percent infestation has been recorded in Kenya and Tanzania with resultant losses of 50-100 percent. Soybeans are severely damaged in China and Java. Large reductions in stands of cowpeas have been reported from Ceylon. Nightshade, chick peas, Dolichos sp., and crotolaria are also reported hosts. This is a new Western Hemisphere record. M. phaseoli is not known to occur in the continental United States. For additional details see CEIR 7(37):751-752, September 13, 1957. (PPC).

General Vegetables - LEAF MINER FLIES (Liriomyza spp.), CARMINE SPIDER MITE (Tetranychus telarius), and GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) continue problem on snap beans throughout Oahu despite intensive spray operations. One or more of these pests also heavy on eggplant, watermelon, tomato, cucumber, daikon, mustard cabbage, bittermelon, and yard-long beans. (Sato et al.). SOUTHERN GREEN STINK BUG (Nezara viridula) nymphs and adults caused moderate to heavy damage to orchid flower buds in Wailuku, Maui. Adults heavy on vegetable crops up to 4,000 feet elevation in Kula. Nymphs and adults light on crops but generally medium on some weeds in Waianae and Ewa, Oahu; light in other farming areas on island. (Miyahira, Funasaki). BEET ARMYWORM (Spodoptera exigua) and leaf miner flies generally medium in green onion fields at Koko Head and Waimanalo, Oahu. Damage by leaf miner flies not so serious as in summer of 1967. (Funasaki).

Fruits - Single specimen of CLOUDY-WINGED WHITEFLY (Dialeurodes citrifolii) found on citrus leaf in Kailua, Oahu. Det. by L.M. Russell. Leaf heavily infested with GIFFARD WHITEFLY (Bemisia giffardi). D. citrifolii first found in State on citrus in March 1966 at Hilo, Hawaii. (Shiroma). Additional specimens of a STINK BUG (Plautia stali) collected on Oahu; 3 adults taken from guava fruits in Palolo area of Honolulu and 1 adult at light at Koko Head. (Wong, Mitchell).

Beneficial Insects - LANTANA HISPID (Uroplata girardi) larvae, pupae, and adults very heavy on lantana in pasture at Ulupalakua, Maui. Up to 75 percent of leaves damaged in some areas. (Ah Sam). Adults of a DUNG BEETLE (Onthophagus catta) heavy in cow dung in pasture at Ulupalakua, Maui. (Miyahira).

LIGHT TRAP COLLECTIONS

Locality	Date	Time	Precipitation	Direction	Type of trap	Number of specimens									
						1	2	3	4	5	6	7	8	9	10
IOWA															
Kanawha 7/11-18					BL	283									
KANSAS					BL	4	2								
Manhattan 7/14					BL		1			5				1	
Wichita 7/14					BL					2				1	
MISSISSIPPI															
Stoneville 7/13-19					2HL	13				28				1	
MISSOURI															
Portageville 7/13-19						3				15				1	
NEW JERSEY															
Aurora 7/11-17					BL	4									
Evesboro 7/11-17					BL	4									
Plainsboro 7/11-17					BL	7									
Seabrook 7/11-17					BL	43									
NORTH DAKOTA															
Fargo 7/18						2									
Hazleton 7/16						1	2								
OHIO															
Hilliard 7/11-17					BL	163									
Wooster 7/11-17					BL	52									
SOUTH DAKOTA															
Brookings 7/15-17					BL	6									
TEXAS															
Waco 7/13-19						23									
WISCONSIN															
Madison 7/11-16					BL	11	7								

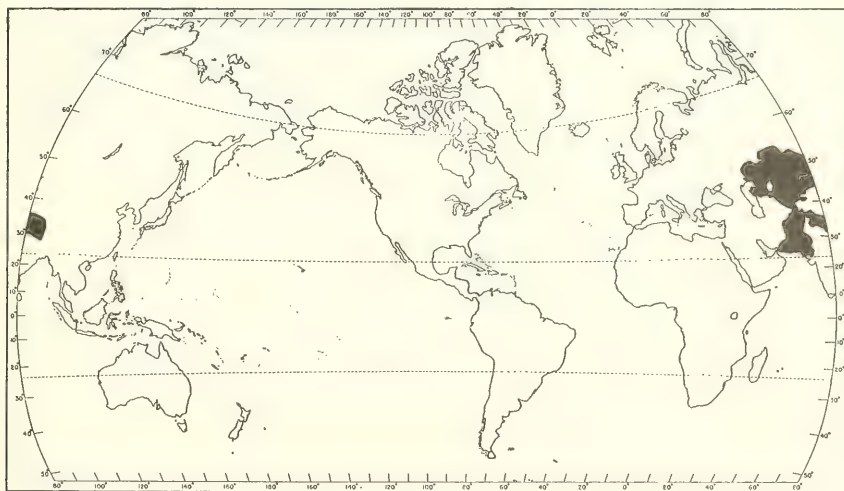
INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

QUETTA BORER (Aeolesthes sarta (Solsky))

Economic Importance: This major pest of fruit also severely damages forest and ornamental trees. Heavy injury has been observed in Afghanistan and serious damage to birch was caused in 1939-1940 in Uzbekistan, USSR. In Quetta and other areas of West Pakistan, trees on many of the streets have been killed. Holes and small rotting areas on the bark of the main trunk and large branches indicate damage by the Quetta borer. Large parts of the attacked areas eventually fall off. As a result of larval feeding into the bast and sapwood, the sap flow is cut off before it reaches the crown and the tree dies. The galleries and tunnels cause a drying out of the stem and branches so that they break off easily in the wind. Trees are often killed in 2-4 years.

Distribution: Afghanistan, China (mainland--Western Tibet), India (Kashmir), Iran (southeastern), Pakistan (West), USSR (southeastern area including Kazakhstan, Uzbekistan). Found usually in the lower mountainous areas.

Hosts: Almond, apple, apricots, peach, quince, walnut, elm, poplars, willows, and other trees.



General Distribution of Aeolesthes sarta (Solsky)

Life History and Habits: Under West Pakistan conditions, the biology is as follows: In May females deposit eggs in groups of 5-10 inside wounds in the bark, pits of stems or broken ends of branches of living trees. One female may lay about 50 eggs which hatch in 10-14 days. At first, the larva feeds on soft bark but later bores into the sapwood where it starts a gallery. During the summer and fall, the larva enlarges the gallery but during the winter it chews out the tunnel. The pupal chamber is constructed the following spring. Pupation requires about 4-5 months but adults remain in the pupal chamber several months until the exoskeleton hardens. Adults appear in May and are numerous in June but decline in July and August. Oviposition occurs about 10 days following mating. The life cycle requires two years.

Description: ADULT - Length 33-44 mm. Elongate, cylindrical; brown, with grayish pubescence. Patches on elytra with a silvery luster; many other species of genus with a gold or coppery luster. Elytra obliquely truncate at apex. Antennae of male twice or more the length of the body. Antennae of female not as long as the body. LARVA - Length about 6 mm. in the first stage but nearly 80 mm. long when full grown. Yellowish and about 15 mm. in diameter when full grown.



Adult Female



Damage to Trunk of Tree
USDA Photo



Full-grown Larva

Selected References: Gahan, C. J. 1906. Fauna of British India. Coleoptera. Vol. 1:129. 2. Gentry, J. W. 1965. U.S. Dept. Agr. Handb. 273:86. 3. Janjua, N. A. and Samuel, C. K. 1941. Imperial Council Agr. Res. Misc. Bul. (India) No. 42:12-13. Illustrations of adult and larva from Janjua and Samuel.

Prepared in Survey and Detection
Operations in cooperation with other
ARS agencies.

U.S. Dept. Agr.
Coop. Econ. Ins. Rpt.
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UNITED STATES DEPARTMENT OF AGRICULTURE
Hyattsville, Maryland 20782

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Cooperative ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

CORN LEAF APHID increasing on corn in Maryland, Illinois, and Wisconsin; heavy on grain sorghum in southern New Mexico. GREENBUG remains heavy on sorghum in Kearney and Adams Counties, Nebraska. (pp. 721-722).

EUROPEAN CORN BORER first-generation moth emergence occurring in many States. WESTERN BEAN CUTWORM flights heavy in central and southwestern Nebraska. CORN ROOTWORM adult emergence continues in most States reporting. (pp. 722-724).

A NITIDULID BEETLE affecting clover seed production in Willamette Valley of Oregon. (p. 725). PEA APHID heavy in alfalfa in some areas of Washington; numerous in north-central Wyoming and in Arkansas Valley of Colorado. (p. 726).

GREEN CLOVERWORM of major importance on soybeans in much of Iowa, thousands of acres treated. BEET ARMYWORM very heavy in several hundred acres of soybeans in Baldwin County, Alabama. (p. 727).

More BOLL WEEVIL control in 1968 than in last 15 years in Tennessee; numbers continue heavy in central and southern Alabama. BOLLWORM egg laying heavy in southern Georgia; heavy and damaging in isolated fields in Alabama. (p. 728).

MEXICAN BEAN BEETLE heavy on beans in San Juan County, New Mexico, and on unsprayed snap beans throughout Maryland. (p. 732).

APPLE MAGGOT emergence continues heavy in Connecticut; peak emergence expected within week in Vermont. EUROPEAN RED MITE increasing in Maine and New Jersey. (p. 735).

WHITE-PINE WEEVIL damage heavy on spruce and pine in Chittenden County, Vermont; damage very evident in Connecticut. (p. 738).

MOSQUITOES worst in many years in northern Indiana; annoying in other States. Total of 187 SCREW-WORM cases reported in southwest U.S. week of July 14. FACE FLY continues severe in Indiana, heavy and annoying throughout Ohio. (p. 740).

GRASSHOPPER control planned for 300,000 acres of rangeland in New Mexico. (p. 743). WHITE-FRINGED BEETLES seriously damaged soybeans in Clarke County, Alabama. (p. 744).

Detection

New State records include HOLLYHOCK WEEVIL in Nevada (p. 737), DOUGLAS-FIR TUSsock MOTH and 2 ERIOPHYID MITES in Arizona. (pp. 737, 739).

For new county records see page 744.

Special Reports

Survey methods. Selected References 1958. Part IX. (pp. 746-750).

Imported Fire Ant Quarantine Map. Centerfold.

Reports in this issue are for week ending July 26 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING JULY 29

HIGHLIGHTS: Precipitation totals ranged widely due to heavy isolated showers. The hot humid weather in the East was followed by a cool sunny, pleasant weekend.

PRECIPITATION: Generous showers occurred early in the week along a front that stretched from the central Rockies to New England; also in the warm moist air along the gulf and from the Dakotas to the Great Lakes in the warm air overrunning the front. Heavy rains in Iowa -- over 2 inches in 6 hours caused extensive flooding along small creeks on Tuesday. Hickman, Nebraska, received 7 inches in 3 hours on Tuesday afternoon which also caused considerable flooding. Beneficial rains fell in Arizona Tuesday -- 3.57 inches at Prescott. Chicago, after 3 weeks of dry weather, received 3-1/2 inches of rain Tuesday p.m. and Wednesday a.m. Heavy rains along Rock Creek -- 8.55 inches at Westmoreland, Kansas -- flooded 3/4 of the town of Louisville, about 15 miles downstream. Five to 6-inch rains soaked other spots in east-central Kansas Tuesday evening and Wednesday morning and more heavy rain fell in extreme east-central Kansas and west-central Missouri on Wednesday evening and Thursday morning. Many spots in the Kansas City vicinity received 3- to 7-inch totals. Rainfall totals ranged widely over much of the East with isolated showers dumping amounts much larger than the averages for the areas. The Great Lakes region received their rains mostly during the first half of the week. In New England the scattered thundershowers occurred at midweek and on Sunday. In parts of the Deep South, the shower activity increased in the last half of the week. Precipitation was mostly light west of the Continental Divide. Wide areas in the Northwest received no rain. In California, only the deserts and the southern coast received sprinkles.

Weather continued on page 733.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (*Pseudaletia unipuncta*) - VERMONT - Damaged some corn in Franklin County. (MacCollom). NEW JERSEY - Moths increased in blacklight collections. (Ins.-Dis. Newsltr.). MARYLAND - Averaged 16 per night at Centreville, Queen Annes County, light trap. No reports of damage. (U. Md., Ent. Dept.). ILLINOIS - Found in grassy cornfields in northern half of State. (Ins. Sur. Bull., July 19). MINNESOTA - No new infestations. Economic only in Chippewa, Swift, Stevens, Kandiyohi, and Grant Counties. Larvae 0.25 inch to full grown; most about 0.5 inch long. Barley swathed in west-central district. (Minn. Ins. Rpt.).

BEET LEAFHOPPER (*Circulifer tenellus*) - UTAH - Ranged 5-25 per 10 sweeps on Russian thistle in Delta and Fillmore areas, Millard County. Curly top damaged tomatoes in many home gardens. (Knowlton, July 23). COLORADO - Ranged 0-1 per square foot on sugarbeets in southwestern area and 0-40 per 100 sweeps in Prowers County. (Bulla, Schweissing). WYOMING - None found in sugarbeet fields in Fremont, Washakie, Hot Springs, or Big Horn Counties; no apparent curly top symptoms. (Parshall).

CORN EARWORM (*Heliothis zea*) - NEW YORK - Undetected on sweet corn as of July 19 in Hudson Valley. Adult emergence heavy in captivity. (N.Y. Wkly. Rpt.). NEW JERSEY - Moths increased in blacklight collections. Controls recommended in southern and central counties. (Ins.-Dis. Newsltr.). MARYLAND - Damage about 5 percent in 3 acres of sweet corn near Wye Mills, Talbot County. No adults in blacklight trap at Centreville, Queen Annes County. (U. Md., Ent. Dept.). SOUTH CAROLINA - Very bad in sweet corn in June in Richland County, especially in untreated fields. Silks dusted 3 times and infestation still high in some cases. Buildup in several Greenwood County cornfields in June. No controls since corn too tall for ground equipment. (Nettles, July 23). GEORGIA - Light to moderate on southern area peanuts. (French, July 22). MISSISSIPPI - Heavy in 2 cornfields in Madison County; treatment applied to 25-acre field. Heavy, infested 30-40 percent of ears on 15 acres of Yazoo County corn. (Dinkins). OKLAHOMA - Medium to heavy on corn in Johnston, Garvin, Bryan, Washita, and Mayes Counties. Averaged 18 per 100 heads in Tillman County milo field. (Okla. Coop. Sur.). UTAH - Adults low in light traps at Delta, Millard County. (Knowlton, Hall, July 23). CALIFORNIA - Larvae medium on field corn at Nestor, San Diego County. (Cal. Coop. Rpt.).

CORN LEAF APHID (*Rhopalosiphum maidis*) - NEW JERSEY - First of season noted on sweet corn in Cape May County field. (Ins.-Dis. Newsltr.). MARYLAND - Increasing in central and eastern sections. Infested 40 percent of 75-acre field near Price, Queen Annes County, and 30 percent of stand in field near Thurmont, Frederick County. (U. Md., Ent. Dept.). OHIO - Colonies continue to form on corn in all areas. (Rose). MICHIGAN - Found on tassels and around upper leaf node of field corn; light in some fields of early tasseling corn. (Jones, July 22). INDIANA - Infestations ranged 4-75 percent on tassel-in-whorl and tasseling corn in northern and central districts; 10 percent of plants with colonies of 1,000+ aphids over much of tassels and 50 percent of plants with colonies of 100 or less aphids in most heavily infested fields. Most high populations in area bordered by State Highway 10 on north and Indianapolis on south. (Huber). ILLINOIS - Increased rapidly in many areas, especially across central district July 13-19. One small colony or more on 50+ percent of plants in many fields; moderate to heavy on some plants; up to 100 percent infestation in few fields. Remains light to moderate in most cornfields; heavy in few fields. (Ins. Sur. Bull.). Increase currently continues in some late whorl or early tassel corn, especially in central district. Based on rating of 1-10 (1 no aphids, 10 heavily infested), average rating per district as follows: Central 5, west 2.3, northwest 2.5, northeast 2.6, east 2.3. (Ill. Ins. Rpt.). WISCONSIN - Continues to increase; occasionally some plants with colonies of 500 or more per tassel. Overall average about 100+ per tassel, especially on tassels enclosed by leaf sheath. (Wis. Ins. Sur.). IOWA - In survey of southern two-thirds of State 73 stops made; 71 stops averaged less than 101 aphids per plant, two stops averaged more than 101 but less than 500 per plant. (Iowa Ins. Sur.).

COLORADO - Ranged 50-300 per corn plant in Weld, Boulder, Morgan, and Larimer Counties. Noneconomic on corn in Arkansas Valley. (Johnson, Schweissing). NEW MEXICO - Heavy on much grain sorghum in southern area. (N.M. Coop. Rpt.).

GREENBUG (*Schizaphis graminum*) - NEBRASKA - Remains heavy in milo sorghum; damage confined mostly to lower leaves, but proceeding upward as aphids move up plants. Up to 1,900-2,000 per leaf in 3 fields in Kearney and Adams Counties. Controls applied. Predators increasing; lady beetles averaged 2 per leaf. (Raun). TEXAS - Ranged 500-2,000 per plant; killed field of late-planted (5 inches tall and less) grain sorghum at Amarillo, Potter County. (Daniels, July 23).

HORNWORMS (*Manduca* spp.) - MARYLAND - *M. sexta* and *M. quinquemaculata* remain light on tobacco. (U. Md., Ent. Dept.).

PAINTED LADY (*Vanessa cardui*) - WISCONSIN - Larvae feeding on thistles as far north as Washington Island. (Wis. Ins. Sur.).

PICKLEWORM (*Diaphania nitidalis*) - GEORGIA - Moderate in summer squash in Spalding County. (Dupree, July 22). ALABAMA - Larvae light in squash and cucumber in Lee County. (Smith).

POTATO LEAFHOPPER (*Empoasca fabae*) - DELAWARE - Continues buildup on lima beans in many areas. (Burbulis). MARYLAND - Generally increasing on bean, soybean, tomato, and hay crops; 7-30 per sweep on alfalfa on Eastern Shore. Higher, 4-75 per sweep, in central area. Up to 150 per sweep on alfalfa near Knoxville. Many Frederick County fields yellowing due to feeding. (U. Md., Ent. Dept.). OHIO - Damage continues in many alfalfa fields. Ranged 7-52 (average 11) per sweep in Hardin, Morrow, Fayette, and Ross Counties. Some yellowing in all fields; damage severe in a field. Crop up to 2 feet high, with many fields in bloom. (Rose). Damage minor (less than one to 2 per sweep) on second cutting in Medina and Wayne Counties; may be heavier on new growth of third crop. Crop 6-16 inches high. (Glass, Thoburn). MICHIGAN - Remains light on soybeans. Old nymphs maturing. Generally noneconomic on alfalfa and clovers. (Janes, July 22). INDIANA - Declined, light in northern districts; adults and nymphs 1-6 per sweep on third-growth alfalfa. (Huber). WISCONSIN - Ranged 6-10 per plant (nymphs numerous) in Dane County green bean planting. (Wis. Ins. Sur.). COLORADO - Ranged 25-100 per 100 sweeps on potatoes west of Rocky Ford, Otero County. (Schweissing).

POTATO PSYLLID (*Paratuberosa cockerelli*) - COLORADO - Adults per 100 sweeps on potatoes ranged 0-5 in Weld County and 0-10 in some fields in Arkansas Valley. (Johnson, Schweissing). CALIFORNIA - Nymphs medium on peppers at San Diego and Encanto, San Diego County. (Cal. Coop. Rpt.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - ARIZONA - Averaged 600 per 100 sweeps in field at Yuma, Yuma County. (McHenry). NEW MEXICO - Generally light to medium on alfalfa in Bernalillo, Sandoval, and Chaves Counties. (Heninger, Mathews). OKLAHOMA - Averaged 200 per 10 sweeps in Tillman County alfalfa field. (Okla. Coop. Sur.). NEBRASKA - Averaged 37 per 600 sweeps in 2 Burt County alfalfa fields; 100 per 300 sweeps in Lancaster County field. (Schalk, July 19). INDIANA - Very light, 2-4 per sweep, on third-growth alfalfa in light soil areas of north-central district. (Huber).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NEW YORK - First-brood moth emergence begun from sweet corn by July 16 in Hudson Valley; second-brood larvae expected to be heavy. Little damage on harvested early sweet corn in Suffolk County; early larvae pupating in Livingston County. Extremely heavy on early growth field corn in Ulster County; mostly fourth and fifth instars. This is serious year for species. (N.Y. Wkly. Rpt.). NEW JERSEY - Moths increased in black-light trap collections. Controls for second-brood larvae recommended in southern and central counties. (Ins.-Dis. Newsltr.). DELAWARE - Adults increased greatly

in blacklight trap collections in Sussex County; averaged 120 per night. (Burbutis). MARYLAND - First-generation adult emergence heavy on Eastern Shore. Adults averaged 60 per night at Centreville, Queen Annes County. Population 60-90 percent pupae in sweet corn near Berlin, Worcester County. Damage heavy on unsprayed sweet corn on lower Eastern Shore. Some pupation in central area. Generally heavy in central counties; 7-80 percent fourth and fifth instars. (U. Md., Ent. Dept.). GEORGIA - Infested 25 percent of plants in 100-acre cornfield in Habersham County. (Gunnels, Jordan). OHIO - First-generation adult emergence and flight begun in central and southern areas. Pupation begun further north in Wayne County. (Rose). MICHIGAN - Pupation begun in some fields, primarily on leaves. Little stalk boring apparent as yet, but some tassel injury. (Janes, July 22). INDIANA - First-generation adults emerging throughout much of State. Emergence, based on light trap captures, begun July 19-20 in southwest, central, and northwest districts and July 23 in east-central district. No adults taken in light traps in south-central and southeast districts as of July 23. (Huber). ILLINOIS - Adults emerging in southern half of State July 13-19. Pupation just beginning in northern sections. (Ins. Sur. Bull.). Second-generation moth emergence nearing completion in southern sections; eggs being laid. Emergence beginning in central section; pupation ranged 15-30 percent in northern section. (Ill. Ins. Rpt.). MISSOURI - Moths in northwest area. (Munson et al.). WISCONSIN - Dissections in Rock County showed 20 percent prepupae, 30 percent fifth instar, 20 percent fourth instar, and 10 percent third instar. (Wis. Ins. Sur.). MINNESOTA - First-generation pupation in Rice County. Infestations light, averaged 10 percent in west-central district; first instar mortality about 75 percent. Infestations in southeast and south-central districts averaged 11 percent. Fourth instars most numerous (72 percent) in southeast and (43 percent) south-central districts; first instars 67 percent of population in west-central district. (Minn. Ins. Rpt.). IOWA - First brood surveyed. Average percent plant infestations by area: East-central 25.9, west-central 33.0, southeast 15.4, and southwest 13.6. Larval average per 100 plants by area: East-central 29.2, west-central 40.1, southeast 17.8, southwest 19.3. Mostly fifth instars in southeast area, fourth instars dominant in other areas. Pupae in all areas. (Iowa Ins. Sur.). NEBRASKA - First-generation larvae in less than one percent of plants in 7 Lincoln County fields. (Staetz).

WESTERN BEAN CUTWORM (*Loxagrotis albicosta*) - NEBRASKA - Moth emergence heavy throughout central and southwestern areas. Increased from 36 July 11 to 1,176 July 16 at light trap in Dundy County. (Hagen). Flights heavy; 635 moths taken in light trap in Dawson County July 21. First moth taken July 3. (Pruess). Egg laying well underway and hatching begun. Egg masses averaged 1 per 25 plants in 6 cornfields in Lincoln County July 18-19. First larvae observed July 22. Egg masses averaged 1 per 100 plants (75-150 eggs per mass) in 7 cornfields in Lincoln County July 25. Mostly first and second instars feeding on developing tassels. (Staetz).

FALL ARMYWORM (*Spodoptera frugiperda*) - ARKANSAS - Larval feeding very heavy on corn foliage in Lincoln County; controls effective. (Boyer).

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - ALABAMA - Much damage by second-generation larvae in Lauderdale, Lawrence, and Marion Counties. (Price et al.).

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - ALABAMA - First and second instars heavy, damaging young grain sorghum stand in Perry County; field previously in corn. (Heirston).

CORN ROOTWORMS (*Diabrotica* spp.) - ILLINOIS - Larvae continued to increase in cornfields as recently hatched larvae found in northern area. Still hatching; larvae expected to increase or remain constant another 2 weeks. Pupation progressing rapidly in many fields and adults emerging. Larvae increased from 45 per hill July 10 to 101 per hill July 17 in northern area field. Goosenecking in many infested cornfields; wilting and dying plants in some heavily infested fields. (Ins. Sur. Bull.). MISSOURI - Adults per plant ranged 8-35 on early planted corn and 0-16 on nontasseled corn in northwest area. (Munson). IOWA -

Adults continue to emerge. D. virgifera adults up to 36+ per plant in some corn in Adams and Fremont Counties. Controls applied. (Iowa Ins. Sur.). MINNESOTA - D. virgifera and D. longicornis development ranged from second instar to few adults in southern counties. Lodging starting in heavily damaged fields after wind and rain. Destroyed or damaged roots ranged from trace to 75 percent. Larvae trace to 20 per plant. Heavy larval feeding severely stunted second-year cornfield in Carver County. (Minn. Ins. Rpt.). SOUTH DAKOTA - Third instars and pupae in research plot in northern Yankton County. D. virgifera development well advanced; averaged 2 adults per corn plant. No D. longicornis adults. (Jessen).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - INDIANA - Adult emergence first observed July 16 in Lafayette area; emergence 5-10 percent as of July 26 based on densities in research plots. (Gould). ILLINOIS - Adult emergence begun in cornfields in northern and central sections July 13-19. (Ins. Sur. Bull.). Adult emergence currently 20-40 percent in northern half of State; averaged 5+ per plant in occasional fields. (Ill. Ins. Rpt.). WISCONSIN - Adults up to 6 (average 1) per tassel in Rock County cornfield; ranged 1-2 (up to 5) per silk in silking corn. Few adults turned green. Generally advanced stages in soil and root area increased at 5 sites July 22. (Wis. Ins. Sur.).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - ILLINOIS - Adults emerging July 13-19. (Ins. Sur. Bull.). Found for first time in Brown County. (Ill. Ins. Rpt.). MISSOURI - Adults continue to emerge; larvae, prepupae, and pupae in northeast area. Adults ranged 15-40 per plant in northwest area. (Munson et al.). NEBRASKA - Adults ranged 1-4 (average 2) per plant in 7 fields in Lincoln County. (Staetz).

CORN FLEA BEETLE (Chaetocnema pulicaria) - MARYLAND - Populations and damage increasing. Damage medium to heavy throughout fields near Buckeystown, Mt. Airy, Knoxville, and Thurmont in Frederick County. Medium to heavy in late-planted cornfields surveyed at Baltimore and in Anne Arundel County. (U. Md., Ent. Dept.).

ENGLISH GRAIN APHID (Macrosiphum avenae) - ARIZONA - Heavy on sorghum in Bowie, Elfrida, and Sulfur Springs Valley areas of Cochise County. (Countryman).

SPIDER MITES - WYOMING - Light on lower leaves of corn plants in Goshen County. (Burkhardt). COLORADO - Tetranychus urticae found on lower leaves in untreated cornfields in Pueblo, Otero, and Crowley Counties; light in western Bent County. (Schweissing). Ranged 0-100 per leaf in Larimer, Weld, Boulder, and Morgan Counties; 3 lower leaves burned in several fields in Boulder and Morgan Counties. Controls recommended. (Johnson).

WHEAT CURL MITE (Aceria tulipae) - OHIO - Appearing on corn following migrations from wheat during first week of July. Currently increasing rapidly in Wayne and Wood Counties and probably elsewhere throughout State. (Nault).

TURF, PASTURES, RANGELAND

FALSE CHINCH BUGS (Nysius spp.) - UTAH - Several hundred N. ericae nymphs per square foot caused concern on farm near Delta, Millard County. Adults generally moderate on farms checked in same county, but damage very light. Larger Nysius sp. numerous on range in Pahvant area in drying meadow areas. (Knowlton, July 23).

CHINCH BUG (Blissus leucopterus) - NEW JERSEY - Infestations severe in Lincroft area, Monmouth County. (Ins.-Dis. Newsltr.).

SOD WEBWORMS - DELAWARE - Damaged lawns at Dover. (Boys, July 25). ILLINOIS - Second-generation moth flight over lawns in southwestern section, appearing in central section. (Ins. Sur. Bull., July 19). MISSOURI - Moths in central part

of State; larvae nearly full grown in northern area lawns. (Munson et al.).
TENNESSEE - Peak flights of Crambus teterrellus, C. trisectus, and C. mutabilis
noted in light traps in Blount and Knox Counties. (Heinrichs).

GRASSHOPPERS - MARYLAND - Melanoplus spp. increasing to heavy levels in pastures
and along roadsides; many nymphs moving into crops in all sections. M. femurrubrum
nymphs dominant. Ranged 30-40 per sweep along Baltimore and Washington Parkway
near Beltsville, Prince Georges County. (U. Md., Ent. Dept.).

WHITE GRUBS - WISCONSIN - Damaged commercial sod field in Winnebago County. (Wis.
Ins. Sur.).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - MAINE - Mostly pupae in York and Cumberland
Counties. Some larvae collected but scarce in mid-July. No adults in field cages
as of July 19. (Boulanger). VERMONT - Larvae continue to damage some regrowth
alfalfa in Franklin County. (MacCollom). INDIANA - Adults ranged 1-3 per 10
sweeps on full-bloom alfalfa in northeast and north-central areas. (Huber).
MICHIGAN - Larvae found in Lapeer County for a new county record. Surveyed 28
counties south of line from St. Clair County to Ottawa County. Very light in
northernmost line of counties; adults 21 per 200 sweeps in Ottawa County. Adults
per 50 sweeps averaged 148 and 78 in Lenawee County field. All instars heavy.
Cocoons with pupae numerous. (Newman). OKLAHOMA - Light in alfalfa field in
Sequoyah County May 23, 1968, for a new county record. (Okla. Coop. Sur.).
NEW MEXICO - Damage light on alfalfa in Corrales, Sandoval County; adults 2-4 and
larvae 3-5 per 25 sweeps. (Heninger). COLORADO - Larvae ranged 0-40 per 100
sweeps on alfalfa in Larimer, Boulder, Weld, and Morgan Counties. (Johnson).
WYOMING - Larval activity decreasing in alfalfa in Washakie, Fremont, Hot Springs,
and Big Horn Counties; larvae 10-100 per 100 sweeps. Pupae and newly emerged
adults numerous in most fields. (Parshall). OREGON - Larvae averaged less than
one per 10 sweeps in mature, second-cutting field at Salem, Marion County. This
is a new county record. (Westcott). WASHINGTON - Adults and young larvae in
several fields July 17 in Central Valley, Spokane County. (Kelsey, Retan).
This is a new county record. (PPC). Few adults and several partially developed
larvae July 9 near Ellensburg, Kittitas County. (Retan).

PEA LEAF WEEVIL (Sitona lineatus) - OREGON - Completely defoliating large areas in
vetch field near Carlton, Yamhill County. Weevils moving across road into
blooming, second-cutting alfalfa field; marginal plants with up to 75 percent
leaf damage. Total 1,422 adults taken in 25 sweeps in this area. Leaf damage
0-10 percent 10-20 yards from margin; 209 adults in 50 sweeps. Only 53 adults
taken in 50 sweeps 75-100 yards from margin of field. (Westcott, July 18).

A JAPANESE WEEVIL (Calomycterus setarius) - IOWA - Up to 12 per 10 sweeps on red
clover in southwest area. Collected in Mills County for a new county record.
(Iowa Ins. Sur.). WISCONSIN - Common on scattered alfalfa in Dane and Rock
Counties; more common on margins and in spots of fields. (Wis. Ins. Sur.).

A NITIDULID BEETLE (Meligethes nigrescens) - OREGON - Heavy in red clover seed
fields as well as other varieties throughout Willamette Valley. Feeding within
individual florets of blossoms prevents formation of seed. (Larson).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - WISCONSIN - Common
on alfalfa in southern and southwestern areas. (Wis. Ins. Sur.).

A FLEA BEETLE (Systema taeniata) - COLORADO - Adults 0-20 per 100 sweeps on
alfalfa in Weld, Boulder, Larimer, and Morgan Counties. (Johnson).

PEA APHID (*Acyrtosiphon pisum*) - WASHINGTON - Very heavy in some alfalfa fields near Kittitas, Kittitas County; heavy in several alfalfa fields in Central Valley, Spokane County. (Retan, July 17). UTAH - Light to moderate in alfalfa in Beaver and Manderfield area, Beaver County; ranged 8-60 per 10 sweeps. Ranged up to 85 per 10 sweeps at McCormick and Meadow, Millard County. (Knowlton, July 23). WYOMING - Increased slightly in Fremont, Washakie, Hot Springs, and Big Horn Counties; adults and nymphs 30-6,000 per 100 sweeps. (Parshall). COLORADO - Counts per 100 sweeps on alfalfa ranged 0-500 in Boulder, Larimer, Weld, and Morgan Counties; 100-500 in Garfield County; and 40-5,000 in Arkansas Valley. (Johnson et al.). NEW MEXICO - Light to medium in alfalfa over most of State. (Mathews, Heninger). OKLAHOMA - Medium in Garvin County alfalfa field. (Okla. Coop. Sur.). INDIANA - Increasing slowly to 8-22 per sweep on third-growth alfalfa in northwest corner of State where rainfall frequent all season. (Huber). MARYLAND - Ranged 3-100 per sweep on central area alfalfa; ranged 2-28 per sweep on Eastern Shore. (U. Md., Ent. Dept.). VIRGINIA - Light on Spotsylvania County red clover. (Allen).

AN APHID (*Aphis cracciae*) - MAINE - Heavy in vetch ground cover on highways; very heavy on about 75 percent of flowering heads. (Boulanger, July 20).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Average per 100 sweeps in alfalfa by county: Graham, 425 at Safford; Pinal, 250 at Casa Grande; Cochise, 70 at San Simon. (Ariz. Coop. Sur.).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Average per 100 sweeps in alfalfa by county: Pinal, nymphs 650 and adults 250 at Casa Grande; Cochise, 350 at San Simon. (Ariz. Coop. Sur.). NEW MEXICO - Nymphs and adults generally very abundant in most alfalfa-growing areas. (N.M. Coop. Rpt.). COLORADO - Adults and nymphs per 100 sweeps on alfalfa: 100-500 in Garfield County, 50-100 in northeastern area. (Johnson, Bulla). WYOMING - Adults and nymphs averaged 53 per 100 sweeps in alfalfa in Washakie, Hot Springs, Big Horn, and Fremont Counties. (Parshall). WASHINGTON - *L. hesperus* heavy on alfalfa cover crop in apple and pear orchards at Methow, Okanogan County, July 13-19. (Rushmore, Retan). Heavy in several alfalfa fields near Ellensburg and Kittitas in Kittitas County July 13-19. Very prevalent in several alfalfa fields in Central Valley area of Spokane County. (Retan). *L. hesperus* and *L. elisus* currently increasing in Yakima Valley alfalfa seed fields following grain and mint harvest. (Menke). After slow development on alfalfa seed fields in Gardena area, Walla Walla County, nymphal populations exploded following prebloom treatments. Most fields retreated July 17-20. (Johansen, Eves).

TARNISHED PLANT BUG (*Lygus lineolaris*) - OHIO - Adults moderate to heavy on alfalfa in State. Ranged 1-5 (average 2) per sweep past 2 weeks in Clark, Darke, Van Wert, Auglaize, Hardin, Morrow, Fayette, and Ross Counties. (Rose). MICHIGAN - Increased over week in State. (Janes, July 22).

ALFALFA PLANT BUG (*Adelphocoris lineolatus*) - OHIO - Generally much less common than *Lygus lineolaris*; up to 9 per sweep in few fields. (Rose). INDIANA - Most common species on northern area alfalfa. Nymphs ranged 4-13 per sweep on third-growth alfalfa throughout northern third of State. (Huber). MICHIGAN - More evident in State. (Janes, July 22).

GARDEN FLEAHOPPER (*Halticus bracteatus*) - MARYLAND - Damage heavy on red clover near Rising Sun, Cecil County. (U. Md., Ent. Dept.).

ALFALFA CATERPILLAR (*Colias eurytheme*) - NEW MEXICO - Generally light on alfalfa in Albuquerque area. (Heninger). Adults and larvae light to medium in alfalfa in Pecos Valley of Chaves and Eddy Counties. (Mathews). COLORADO - Larvae ranged 0-70 per 100 sweeps on alfalfa in Boulder, Larimer, Weld, and Morgan Counties. (Johnson). WISCONSIN - Larvae averaged about 1 per 10 sweeps in southern and southwestern area alfalfa. (Wis. Ins. Sur.). MARYLAND - Averaged 2 per sweep on 3 acres of alfalfa near Centreville. (U. Md., Ent. Dept.).

GREEN CLOVERWORM (*Plathypena scabra*) - VIRGINIA - Larvae 25 per 100 sweeps in Spotsylvania County clover field. (Allen). WISCONSIN - Larvae averaged less than 1 per 10 sweeps in south and southwest alfalfa. (Wis. Ins. Sur.). IOWA - Averaged 6 per 100 sweeps on west-central area alfalfa. (Iowa Ins. Sur.).

ALFALFA SEED CHALCID (*Bruchophagus roddei*) - NEVADA - Heavy in alfalfa seed fields in Dixie Valley; light to medium in Lovelock, Pershing County. Damage may be heavier than in 1967. (Brinkerhoff).

SPIDER MITES (*Tetranychus* spp.) - NEVADA - Increasing, damaging untreated alfalfa seed fields in Oroville, Humboldt County. Controls in progress. (Lundahl).

SOYBEANS

GREEN CLOVERWORM (*Plathypena scabra*) - MICHIGAN - Larvae undetected in southwest area July 18. (Janes). Low in blacklight traps. (Newman). INDIANA - Early instars trace in central and northern areas. (Huber). ILLINOIS - Found in some central and northern area fields July 13-19; damage not apparent. (Ins. Sur. Bull.). Currently increasing in soybeans, primarily in northern half of State. Averaged up to 10 per row foot in few fields in some areas. Many larvae still small; defoliation not yet severe. (Ill. Ins. Rpt.). IOWA - Major importance this week in much of State. Heaviest in central, east-central, and southeast areas. Thousands of acres being treated. (Iowa Ins. Sur.).

BEET ARMYWORM (*Spodoptera exigua*) - ALABAMA - First infestation of year near Foley, Baldwin County, about July 1. Developing larvae very heavy in several fields July 19 in area; affected several hundred acres. Full-grown larvae destroyed 35-50 percent of foliage in some fields. One large field received 12 control applications under adverse weather conditions; little or no control reported. Det. by H.B. Cunningham. (Campbell et al.).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - VIRGINIA - Generally light on soybeans in Hanover County. (Allen). MARYLAND - Adults and larvae damaged 10 percent of 15 acres near Cokesbury, Somerset County. (U. Md., Ent. Dept.). SOUTH CAROLINA - Heavy in some fields in Spartanburg County in June. Very few fields where damage great enough to justify controls in Allendale County in June. (Nettles). GEORGIA - Increasing with emergence of adults in Spalding County. (Dupree, July 22). ALABAMA - Adults medium on several hundred acres of young soybeans at Atmore prison farm in Escambia County. (Lemons, Daniel).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - MARYLAND - Damaged 30 percent of 15-acre planting near Cokesbury, Somerset County. (U. Md., Ent. Dept.).

GRASSHOPPERS - MARYLAND - Caused 40 percent foliage loss in 15-acre field near Sudlersville; Queen Annes County. Migrating from nearby pasture. Melanoplus femurrubrum dominant. (U. Md., Ent. Dept.).

PEANUTS

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - GEORGIA - Adults very heavy in Calhoun County and larvae very heavy in Tift County. (French, Rodgers, July 22).

RED-NECKED PEANUTWORM (*Stegasta bosqueella*) - OKLAHOMA - Infested 90 percent of terminals in Greer County fields; medium in Johnston County. (Okla. Coop. Sur.).

SPIDER MITES - GEORGIA - Light to heavy across peanut belt week ending July 22. Currently very heavy in many fields in several southern counties. (French et al.).

COTTON

BOLL WEEVIL (*Anthonomus grandis*) - SOUTH CAROLINA - Increasing rapidly in inadequately treated fields at Florence. Percent larval infestations ranged 0-26.3 in treated plots and 1.7-51.8 in untreated plots. Adults per 100 squares ranged 0-0.2 in treated plots and 0-0.6 in untreated plots. (Taft et al.). GEORGIA - Infestation 16 percent in untreated Spalding County field and 0-33 percent in Schley County week ending July 20. (French et al.). Activity currently increasing generally in southern area. Percent punctured squares ranged 0-78 (average 12) in 22 fields; squaring of older cotton about stopped; blooming in many fields. (Womack). ALABAMA - Second, third, and overlapping generations continue heavy in central and southern areas; section involved includes half circular-shaped area in western and northwest areas up to and including Marion and Franklin Counties. Weevils heavier every year in this upper coastal soil area of State than in corresponding northern areas. Controls very good; punctured squares continue lower in this general area than in last 2 years. Relatively light in most of northern area and in large acreages of Tennessee Valley area; heavier generally in small fields where weevils overwintered nearby. (McQueen). TENNESSEE - Still between generations. Some first-generation weevils in early cotton feeding mostly on blooms and squares; some punctured squares due to egg laying. Punctured squares averaged 14 percent in treated and untreated fields in regularly infested portion of cotton-growing area. Rain over area should cause infestations to vary widely from locality to locality and, in some cases, from field to field. Dry weather caused much mortality of first-generation weevils. More control noted in 1968 than in last 15 years. (Locke). MISSISSIPPI - Remains lower than normal in much of State. Increased this week; second-generation emergence begun during first part of week in south delta area. Average percent infestation by county: Hinds, 8 in 2 fields; Clay, 15 in 10; Adams, 7 in 2; Washington, 3 in 10; Union, 5 in 12; Sharkey, 2 in 30; Pike, 15 in 5; Montgomery, 3 in 56; Issaquena, 1 in 18; Holmes, 6 in 15; Yazoo, 6 in 30 fields. (Dinkins). Increasing rapidly in experimental plots in delta counties. (Pfrimmer et al.). ARKANSAS - Infestations much lower than in many years. Infested 2,420 (40.2 percent) of fields surveyed (substantial increase), but relatively low compared with past years. Most infestations very light. Above treatment level in 76 fields. (Boyer, Barnes). OKLAHOMA - Light on cotton in Beckham, Caddo, Custer, and Washita Counties. Beneficial species numerous. Infestation ranged 3-6 percent in most southwest counties. Damaged squares 25-35 percent in Greer County field. (Okla. Coop. Sur.). TEXAS - Increased over previous week in McLennan and Falls Counties. Damaging infestations found in 4 of 7 treated fields and in 20 of 36 untreated fields. Percent punctured squares ranged 4.6-21.7 (average 11.5) in treated fields and 3-39.5 (average 16.1) in untreated fields. (Cowan et al.). For Boll Weevil in High Plains see page 742.

BOLLWORMS (*Heliothis* spp.) - SOUTH CAROLINA - Percent larval infestations ranged 0-3.3 in treated plots and 0-1.0 in untreated plots at Florence. Total of 66 *H. zea* and 2 *H. virescens* moths taken in light trap during week; total to date 432 *H. zea* and 6 *H. virescens*. (Taft et al.). GEORGIA - Infestation 2 percent in untreated Spalding County field week ending July 20. Moths increased last 3 days in Spalding County light trap. Eggs 60-250 and larvae 1-10 per 100 terminals in Wheeler County. (Williams et al.). Eggs currently heavy; eggs 63-120 (average 76) and larvae 0-26 (average 8) per 100 terminals in 22 fields in southern area. (Womack). ALABAMA - Continue in all fields throughout State. Heavy and damaging in some isolated fields in Macon, Tallapoosa, Morgan, Talladega, Montgomery, and Lee Counties probably due to improper controls for boll weevil. No serious infestations during week. (McQueen). TENNESSEE - Damage continues throughout area; *H. zea* moving from squares to bolls. Numbers light to heavy; eggs or larvae 1-16 per 100 terminals. Eggs on terminals, squares, stems, and down in plants on stalk. (Locke). MISSISSIPPI - Remained low throughout State; very few flights observed. Egg counts remained generally low. Eggs increased, 6 per 100 terminals in most fields in Yazoo County; 12 per 100 terminals in one field. Larval average per 100 terminals by county: Hinds, 3 in 2 fields; Union, 3 in 12; Sharkey, 1 in 30; Montgomery, 4 in 56; Issaquena, 2 in 18; Holmes, 1 in 15 fields. (Dinkins). *H. zea* damaged some squares in delta counties; very few eggs and larvae. Flight increased some, but still low for time of year. (Pfrimmer et al.). ARKANSAS -

H. zea eggs, larvae, and/or both found in 2,360 fields; some damaged squares in 2,729 fields. Percent damaged squares averaged less than one in 709 fields, 1-2 in 1,181 fields, 2-5 in 646 fields, 5-8 in 150 fields, and 8+ in 43 fields; no damaged squares found in 3,297 fields. Moths noted on sugar lines and taken in light traps do not indicate heavy flight. Total of 10 moths present on sugar line July 17-23. Predators more effective in many cases. (Boyer, Barnes). TEXAS - Increased over previous week in McLennan and Falls Counties. Eggs ranged 1.3-8.0 (average 5) and larvae 4.6-13.7 (average 8.8) per 100 terminals in 7 treated fields; eggs 0-8 (average 3.6) and larvae 0.5-25 (average 6.1) per 100 terminals in 36 untreated fields. Percent damaged squares ranged 4.6-14.3 (average 10.2) in 7 treated fields and 0-23 (average 7.6) in 36 untreated fields. Percent damaged bolls ranged 6.2-15.6 (average 10.5) in 7 treated fields and 1.5-26.5 (average 9.2) in 32 untreated fields. Of 305 larvae previously collected on cotton, 23 percent determined H. virescens. Eggs laid in blooms and on squares and bolls down in plants rather than as usual in terminals. (Cowan et al.). Light in Terry and Yoakum Counties; very light in Floyd and Garza Counties. (Almand, July 23). OKLAHOMA - Light on cotton in Beckham, Caddo, Custer, and Washita Counties. Larvae infested 7 percent of Greedy County cotton and 15-20 percent of terminals and squares in Greer County field. (Okla. Coop. Sur.). ARIZONA - Few H. zea found in Cochise, Graham, Maricopa, Pinal, and Yuma Counties; larvae usually 1-2 per 100-foot row. (Ariz. Coop. Sur.).

LOOPERS - GEORGIA - Light to very heavy in many southern area fields; defoliating cotton in several Turner and Colquitt County fields; virus disease present. (Womack).

TARNISHED PLANT BUG (Lygus lineolaris) - MISSISSIPPI - Heavy in some young cotton in Yazoo County; nymphs high, averaged 10-16 per 100 terminals. (Dinkins). ALABAMA - Widespread in cotton in northern area. Destroying small squares; some controls applied. (McQueen). TENNESSEE - Continues blasting of pinhead squares over area. (Locke).

LYGUS BUGS (Lygus spp.) - ARIZONA - Counts per 100 sweeps averaged 60 at Safford, Graham County, and 40 in Pinal County. (Ariz. Coop. Sur.). NEVADA - Counts per 50 sweeps averaged 8 (highest) in one field, but generally ranged 0-4 in remaining fields in Pahrump Valley, Nye County. (Nev. Coop. Rpt.).

PLANT BUGS - ARKANSAS - Primarily Lygus lineolaris and Psallus seriatus of little concern in State. Counts per 100 terminals ranged 1-19 (light) in 4,674 fields and 20-39 (medium) in 30 fields. None found in 1,314 fields. (Boyer). ALABAMA - Adelphocoris rapidus widespread in cotton in northern area. Destroying small squares; some controls applied. (McQueen). ARIZONA - Spanogonicus albofasciatus averaged 150 per 100 sweeps in Pinal County. (Ariz. Coop. Sur.).

COTTON FLEAHOPPER (Psallus seriatus) - ALABAMA - Widespread in cotton in northern area. Destroying small squares; some controls applied. (McQueen). OKLAHOMA - Light to medium in Washita County. (Okla. Coop. Sur.). TEXAS - Continues to decline in McLennan and Falls Counties. Counts per 100 terminals averaged 2.1 in 5 treated fields and 7 in 34 untreated fields. (Cowan et al.). Light in Cochran, Garza, Lubbock, Martin, Terry, and Yoakum Counties; light to medium in Floyd and Crosby Counties. (Almand, July 23).

APHIDS - TENNESSEE - Heavy in some terminals in some rank cotton fields over area. (Locke). MISSISSIPPI - Aphis gossypii in some fields where controls applied erratically in delta counties. (Pfrimmer et al.). ARKANSAS - A. gossypii generally very light; biological control noted in Jefferson County. (Boyer).

SPIDER MITES - GEORGIA - Moderate in Spalding County week ending July 20. (Beckham). Currently increasing in many fields in southern area. (Womack). TENNESSEE - Damage severe throughout area. Spot infestations in most cases have become general; conditions ideal for further increase. (Locke). ALABAMA - Mostly Tetranychus urticae continues to damage cotton in many fields in central and northern areas. Infestation more widespread than in last 5 years. (McQueen).

MISSISSIPPI - T. urticae generally scattered and spotty in some west-central counties. Heavy in Grenada County fields, 2 Washington County fields, and in spots in several Montgomery County fields. (Dinkins). Very spotty in delta counties; heavy in few spots. Buildup slowed past week by rain. (Pfrimmer et al.). NEVADA - Tetranychus spp. medium to heavy and spotted in one field in Pahrump Valley, Nye County. (Zoller).

TOBACCO

GREEN PEACH APHID (Myzus persicae) - MARYLAND - Light to heavy; continues to increase in southern area. Medium to heavy on 32-61 percent of plants in fields near Scotland, St. Marys County. (U. Md., Ent. Dept.).

VARIEGATED CUTWORM (Peridroma saucia) - WISCONSIN - Larvae common where growth dense in southern Dane County. (Wis. Ins. Sur.).

LOOPERS - WISCONSIN - First and second instars prevalent in southern Dane County; buildup possible. (Wis. Ins. Sur.).

SUGARBEETS

BET WEBWORM (Loxostege sticticalis) - COLORADO - Larvae increasing in Crowley and Prowers Counties; ranged 0-100 per 100 sweeps. Light in southwestern area. (Schweissing, Bulla).

LYGUS BUGS (Lygus spp.) - WYOMING - Adults averaged 6 per 100 sweeps in sugarbeet fields in Washakie, Fremont, Big Horn, and Hot Springs Counties. (Parshall).

A FLEA BEETLE (Systema taeniata) - COLORADO - Adults 0-30 per 100 sweeps in Boulder, Weld, Larimer, and Morgan Counties; damage light in most cases. (Johnson).

GREEN PEACH APHID (Myzus persicae) - WASHINGTON - Population lightest in years in Walla Walla County. (Landis, July 19).

ONION THRIPS (Thrips tabaci) - WASHINGTON - Infested all fields in Walla Walla area, Walla Walla County. (Landis, July 19).

MISCELLANEOUS FIELD CROPS

A PHYCITID MOTH (Homocidoma sp.) - OKLAHOMA - Heavily damaged Grady County sunflowers. (Okla. Coop. Sur.).

A BILLBUG (Rhodobaenus tredecimpunctatus) - ALABAMA - Adults very heavy in 20-acre sunflower planting in Talladega County July 9; noted on about 35-40 percent of blooming plants. Egg laying on preblossom buds and on stalks. (Mathews et al.).

SUNFLOWER BEETLE (Zygospila exclamationis) - NORTH DAKOTA - Adults and larvae in margins of several sunflower fields in Reynolds area, Traill County; larvae second to last instar. Shot-holing light to heavy in field margins. (McBride).

A GRASSHOPPER (Melanoplus sp.) - OREGON - Nymphs severely damaged peppermint fields near Jasper, Lane County. Ranged 35-100 per 10 sweeps. Aerial treatments necessary. (Larson). Grasshoppers damaging peppermint near Grants Pass, Josephine County. (Phillips).

HOP APHID (Phorodon humuli) - WASHINGTON - General population increase of nymphs and adults on hops in lower Yakima Valley, Benton County. (Cone).

TWO-SPOTTED SPIDER MITE (Tetranychus urticae) - WASHINGTON - Buildup of all stages on hops begun on lower foliage in Yakima Valley; ranged 5-50 per leaf. (Cone).

POTATOES, TOMATOES, PEPPERS

Potato Aphids in Maine - Macrosiphum euphorbiae predominant in all districts followed by Aphis nasturtii, Myzus persicae, and Acyrtosiphon solani. All species increased from 0.3 to 3.2 per plant (3 leaves) on untreated potatoes at Presque Isle; very light for time of year due to predators in mid-July. Increased substantially in Houlton and Lee districts; all species up to 63 per plant in untreated early planted potato fields. Infestation capable of reducing potato yield in Houlton and Lee districts. (Shands et al.).

GREEN PEACH APHID (Myzus persicae) - DELAWARE - Heavy on pepper plantings statewide; still active in many potato fields. (Boys, July 25). MARYLAND - Heavy on peppers near Sudlersville, Queen Annes County; controls applied. (U. Md., Ent. Dept.). WASHINGTON - Alates increasing in trap pans; alates and apterae increasing on lower potato leaves in Quincy, Grant County, and Othello, Adams County. (Powell).

POTATO APHID (Macrosiphum euphorbiae) - MARYLAND - Heavy on potatoes at Westover, Somerset County. Controls not applied due to nearness of harvest. (U. Md., Ent. Dept.).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - MAINE - Larvae continue troublesome in few potato fields in Lee district where controls removed by rains. Light in Houlton and Presque Isle districts. (Shands et al.). RHODE ISLAND - Populations lower than normal in Washington County. (Kerr). NEW JERSEY - Adults and larvae caused moderate injury in several southern county potato fields. (Ins.-Dis. Newsltr.). MARYLAND - Still remains heavy on unsprayed tomatoes at Salisbury, Wicomico County; damage heavy to planting of 300 eggplants near Dorsey, Howard County. (U. Md., Ent. Dept.). MINNESOTA - Occasionally found during inspections in Red River Valley. (Minn. Ins. Rpt.). COLORADO - Adults and larvae ranged 0-5 per plant on potatoes in Boulder, Larimer, and Weld Counties. (Johnson). ARIZONA - Heavy on potatoes west of Kayenta (Longhouse Valley) on Navajo Indian Reservation, Navajo County. (Laird).

VARIEGATED CUTWORM (Peridroma saucia) - OHIO - Heavy on about 300 acres of potatoes in Wayne County; first-generation larvae 10-20 per plant. Larvae ranged from half to full grown. Damage moderate, but expected to increase within few days. Emergency treatment required. (Rings).

CABBAGE LOOPER (Trichoplusia ni) - COLORADO - Larvae per 100 sweeps ranged 0-10 on tomatoes in Pueblo, Crowley, Otero, and Prowers Counties and 0-65 on potatoes in Arkansas Valley; highest on potatoes in Prowers County. (Schweissing).

TOMATO FRUITWORM (Heliothis zea) - GEORGIA - Moderate in Spalding County tomatoes. (Dupree).

EUROPEAN CORN BORER (Ostrinia nubilalis) - NEW YORK - Second brood may become problem during August on Suffolk County potatoes. (N.Y. Wkly. Rpt., July 22).

FALSE CHINCH BUG (Nysius ericae) - COLORADO - Ranged 25-1,000 per 100 sweeps on potatoes in Otero County; severe wilting and yellowing in heavily infested fields. (Johnson et al.).

TARNISHED PLANT BUG (Lygus lineolaris) - NEW YORK - Moved to potatoes in many cases since advent of rapid drying and ripening of small grains; active statewide. (N.Y. Wkly. Rpt., July 22).

PEPPER MAGGOT (*Zonoseata electa*) - NEW JERSEY - Adults trapped on stickyboards near Cedarville, Cumberland County, increased sharply. Growers in all southern counties advised to continue weekly sprays through August 9. (Ins.-Dis. Newsltr.).

SPIDER MITES (*Tetranychus* spp.) - OKLAHOMA - Heavy on Cleveland County tomatoes. (Okla. Coop. Sur.). NEW JERSEY - *T. urticae* building up on eggplant in several southern county fields. (Ins.-Dis. Newsltr.).

BEANS AND PEAS

MEXICAN BEAN BRETLE (*Epilachna varivestis*) - NEW YORK - Appears generally light, half-grown larvae most advanced stage in Livingston County. Expect egg laying to continue for several days. (N.Y. Wkly. Rpt., July 22). MARYLAND - Heavy damage to unsprayed snap beans statewide. Adults and larvae damaged 60-80 percent of foliage in planting in Prince Georges and Queen Annes Counties. (U. Md., Ent. Dept.). VIRGINIA - Overwintering adults still feeding on string and butter beans in garden. Larvae abundant in Hanover County. Few "new" adults and larvae on Spotsylvania County lima beans. (Allen). COLORADO - Adults averaged one per 100 row feet on beans in Boulder, Larimer, Weld, and Morgan Counties; larvae 0-15 per plant in Larimer, Boulder, Weld, Morgan, Pueblo, Crowley, and Otero Counties. (Johnson, Schweissing). NEW MEXICO - Heavy on beans in Farmington, San Juan County; averaged 0-5 per plant on pinto beans in Manzano, Torrance County. (Heninger).

TARNISHED PLANT BUG (*Lygus lineolaris*) - NEW YORK - Adults unusually numerous in dry bean fields in Livingston County. (N.Y. Wkly. Rpt., July 22). NEW JERSEY - Easily found on bean plants and various weed hosts near bean fields; controls recommended. (Ins.-Dis. Newsltr.). DELAWARE - Nymphs and adults common on snap and lima beans in Sussex County. (Burbutis). MICHIGAN - Problem imminent on lima beans in close proximity to forage legumes. (Janes, July 22).

BEAN APHID (*Aphis fabae*) - DELAWARE - Increasing on Sussex County lima beans. (Boys, July 25). NEW JERSEY - Curling young bean leaves in several Cape May County fields. Controls recommended. (Ins.-Dis. Newsltr.). WISCONSIN - Colonies heavy on blossoms of untreated lima bean planting in northern Dane County; heavy rain July 23 nearly eliminated population. (Wis. Ins. Sur.). WASHINGTON - Generally infested bush and pole beans throughout Clark County. (Shanks, July 19).

WESTERN YELLOW-STRIPED ARMYWORM (*Prodenia praefica*) - IDAHO - Most larvae in second and fourth instars. Ranged from none per square yard to 1 per square foot in lentil field at Troy, Latah County. Cut lentil pods on ground ranged up to 4 per square foot. Harvest expected in about 3 weeks. Control treatment advised. (Futter, Portman, July 17).

GREEN CLOVERWORM (*Plathypena scabra*) - DELAWARE - Increasing on Sussex County lima beans. (Boys, July 25).

TWO-SPOTTED SPIDER MITE (*Tetranychus urticae*) - NEW JERSEY - Building up on lima beans in several fields in Cape May County. Dry weather should increase buildup and damage. Controls recommended. (Ins.-Dis. Newsltr.).

COLE CROPS

CABBAGE LOOPER (*Trichoplusia ni*) - NEW JERSEY - Adults increasing in blacklight traps in southern counties. Preventive controls on crucifers recommended. (Ins.-Dis. Newsltr.). MICHIGAN - Three moths taken in blacklight trap at experimental farm July 16 at Sodus, Berrien County. Movement well underway into State. (Newman). ILLINOIS - Feeding on outer leaves of cabbage heads. (Ins. Sur. Bull., July 26). ALABAMA - Larvae heavy in abandoned cabbage fields in De Kalb County. (Leeper).

CABBAGE MAGGOT (*Hylemya brassicae*) - RHODE ISLAND - Heavy in radishes in Washington County. (Stessel). VERMONT - Continues troublesome on various crucifers, including rutabaga. (MacCollom).

HARLEQUIN BUG (*Murgantia histrionica*) - CALIFORNIA - Adults heavy on horseradish at Nice, Lake County. (Cal. Coop. Rpt.).

TURNIP APHID (*Hyadaphis pseudobrassicae*) - CALIFORNIA - Adults and nymphs heavy on black mustard plantings at Crescent City, Del Norte County. (Cal. Coop. Rpt.).

CUCURBITS

MELON APHID (*Aphis gossypii*) - MARYLAND - Heavy on watermelon, melons, and cucumbers on Eastern Shore; sprays applied. (U. Md., Ent. Dept.).

SQUASH BUG (*Anasa tristis*) - OKLAHOMA - Medium, damaging Bryan County squash. (Okla. Coop. Sur.).

CORRECTIONS

CEIR 18(30):695 - TARNISHED PLANT BUG (*Lygus lineolaris*) - ... VIRGINIA - Adults 8-100 ... should read Adults 80-100 ... (Allen).

CEIR 18(30):695 - WEBWORMS (*Loxostege* spp.) should read (*Loxostege* spp.).

CEIR 18(30):706 - ARCTIID MOTHS - NEW JERSEY - *Halisodota harrisii* should read *Halisidota harrisii*.

CEIR 18(30):709 - HONEY BEE - (*Aphis mellifera*) should read (*Apis mellifera*).

CEIR 18(30):711 - First paragraph, line 14 - *Trachyrachys kiowa* should read *Trachyrhachys kiowa*.

Weather of the week continued from page 720.

TEMPERATURE: Pleasant summer weather continued across much of the Nation. Early morning temperatures ranged from the 50's along the Canadian border to the 90's over the southern half of the Country. Portions of Kansas and Oklahoma registered 100° or higher on a few days early in the week -- 104° at Russell, Kansas, on Tuesday. Such temperatures occurred almost daily in the southwestern deserts -- 108° at Blythe, California, on Wednesday. Skies were mostly sunny except along the front that stretched from the Colorado Rockies to the Northeast in the warm moist air overrunning the front, and along the gulf where afternoon cumuli formed. High pressure moved into the East late in the week bringing a sunny cool pleasant weekend. Weekly mean temperatures averaged near normal over most of the Nation. The two main exceptions were the Dakotas which averaged 6° to 8° cooler than normal and eastern Oregon which averaged several degrees warmer than normal. (Summary supplied by Environmental Data Service, ESSA.)

GENERAL VEGETABLES

BRISTLY CUTWORM (*Lacinipolia renigera*) - MICHIGAN - High at all blacklight stations ranging from nightly catch of 23 to 71. (Janes, July 22).

CUTWORMS - MICHIGAN - Adults increasing at all stations. Ranged from low of 38 slightly to high of 84. *Euxoa messoria*, *Crymodes devastator*, *Apamea amputatrix*, *Peridroma saucia*, and others involved. (Janes, July 22).

ASPARAGUS BEETLES (*Crioceris* spp.) - MICHIGAN - Active last week on asparagus fern growth (Thompson, July 22); will continue problem until beetles hibernate (Janes, July 22). NEW JERSEY - Adults and larvae feeding on asparagus ferns in many southern county fields. (Ins.-Dis. Newsltr.).

TARNISHED PLANT BUG (*Lygus lineolaris*) - MICHIGAN - Problem imminent on celery due to nearness to infested forage legumes. (Janes, July 22).

HARLEQUIN BUG (*Murgantia histrionica*) - CALIFORNIA - Adults medium on leaf lettuce at Nice, Lake County. (Cal. Coop. Rpt.).

GREEN PEACH APHID (*Myzus persicae*) - NEW JERSEY - Continues to increase on many vegetables throughout State. Many growers applying controls. (Ins.-Dis. Newsltr.).

ONION THRIPS (*Thrips tabaci*) - COLORADO - Ranged 0-120 per onion plant in Arkansas Valley and 0-10 per plant in Boulder, Weld, Larimer, and Morgan Counties. (Schweissing, Johnson). MARYLAND - Heavy on sweet onions at Wye Mills, Talbot County. (U. Md., Ent. Dept.).

SPINACH LEAF MINER (*Pegomya hyoscyami*) - MAINE - Numbers and damage heavy on Swiss chard, garden beets, and spinach in Island Falls, moderate on Swiss chard at Houlton, Aroostook County; light on beets and Swiss chard at Jonesboro, Washington County. (Boulanger, July 20).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (*Carpocapsa pomonella*) - MAINE - Entries uncommon in abandoned orchards, but eggs more abundant. Warm evenings increased adult activity past 2 weeks. (Boulanger, July 20). NEW YORK - Activity still light. (N.Y. Wkly. Rpt., July 22). RHODE ISLAND - Light in unsprayed orchard in Providence County. (Field). DELAWARE - Adults emerging from unsprayed apple orchards at Newark, New Castle County. (Boys, July 25). INDIANA - Adult activity low; only 35 males in 30 virgin female traps at Vincennes orchard. (Wong, July 22). COLORADO - Second-brood adults in sex attractant traps in southwestern area; second-brood cover sprays established in all areas. (Bulla). WASHINGTON - Damage July 17 in Green Bluff, Spokane County, suggested start of second-brood moth activity. (Kruiswyk, Retan). First second-brood larval entries in unsprayed pears July 16 in Yakima County. At end of first brood (July 10), 52 percent of sample of unsprayed pears near Yakima infested; 80 percent of larvae full grown. First emergence of second-brood moths recorded July 7 in upper Yakima Valley; 24 males in sex lure trap July 9. (Johnson).

ORIENTAL FRUIT MOTH (*Grapholitha molesta*) - CONNECTICUT - Much peach injury at New Haven, New Haven County. (Savos, July 23). INDIANA - Slight increase of adults (128) in 2 bait stations at Vincennes orchard. (Wong, July 22). MISSOURI - Moderate on unsprayed delta area and sprayed west-central area peach. Light on sprayed southeast area peach. (Wkly. Rpt. Fr. Grs., July 23). WASHINGTON - Two moths collected in upper Yakima Valley area near Moxee confirmed last period's new locality record; first caged emergence of third-brood moths July 17. (Johnson, Ryan).

and repainted.

*Information as to designated laboratories and processing plants may

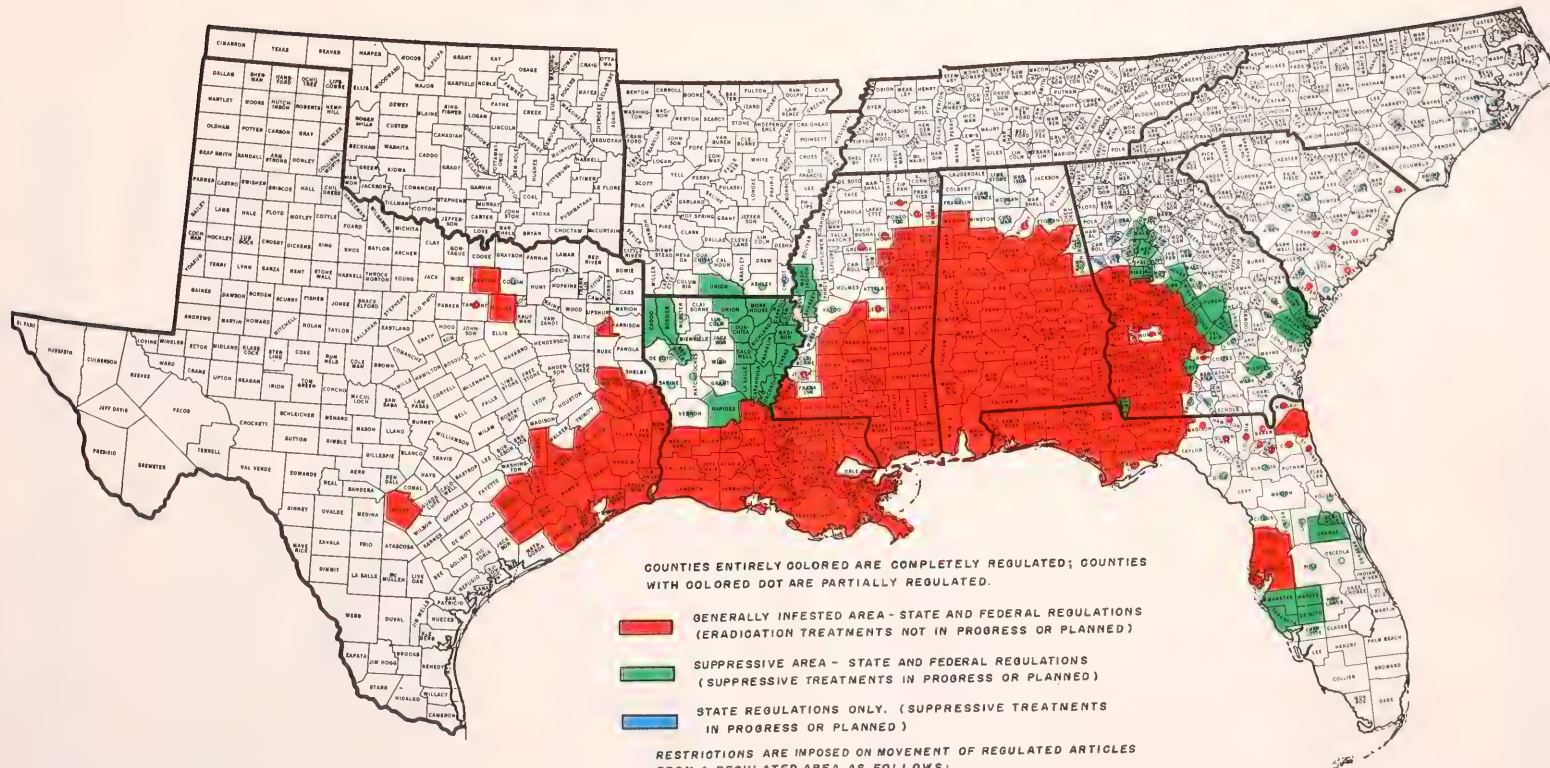


CONSULT YOUR STATE OR FEDERAL
PLANT PEST CONTROL INSPECTOR
OR YOUR COUNTY AGENT FOR
ASSISTANCE REGARDING EXACT
AREAS UNDER REGULATION AND
REQUIREMENTS FOR MOVING
REGULATED ARTICLES.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
COOPERATING WITH AFFECTED STATES

Revised Mar. 15, 1968

IMPORTED FIRE ANT QUARANTINE



CONSULT YOUR STATE OR FEDERAL PLANT PEST CONTROL INSPECTOR OR YOUR COUNTY AGENT FOR ASSISTANCE REGARDING EXACT AREAS UNDER REGULATION AND REQUIREMENTS FOR MOVING REGULATED ARTICLES.

U.S. DEPARTMENT OF AGRICULTURE
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THE FOLLOWING CROPS OR ARTICLES MUST BE MOVED UNDER CERTIFICATE OR PERMIT YEAR-ROUND EXCEPT AS INDICATED:

1. Soil, compost, decomposed manure, humus, muck, and peat, separately or with other things.

Soil samples of any size shipped to U.S. Army Corps of Engineers Soil Laboratories within the conterminous U.S. are exempt. Soil samples of one pound or less are exempt if shipped to a designated laboratory.*

Compost, decomposed manure, humus, and peat are exempt** if dehydrated, ground, pulverized, or compressed.

2. Plants with roots to which soil is attached.

3. Grass sod.

4. Hay and straw.

5. Logs, pulpwood, and stumpwood.

Logs and pulpwood are exempt** provided the railroad loading site has been treated.

Stumpwood if free of excessive amounts of soil is exempt** provided the railroad loading site has been treated and the stumpwood is consigned to a designated plant.*

6. Used mechanized soil-moving equipment.

Used mechanized soil-moving equipment is exempt** if cleaned

FALL WEBWORM (*Hyphantria cunea*) - INDIANA - Hatch underway in north-central and northwest districts. Small webs on roadside hickory, walnut, cherry, and apple. Many colonies with no webs as of July 24. (Huber). MISSOURI - Webs still small in central area. (Munson). OREGON - Larvae in second instar. Tents numerous, especially on walnut, at Salem, Marion County. (Westcott).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - INDIANA - Third flight begun at Vincennes. Marked increase (318 males) in 30 virgin female traps (69 previous week). (Wong, July 22).

LESSER PEACH TREE BORER (*Synanthedon pictipes*) - INDIANA - Males increased (239) in virgin female traps at Vincennes orchard. (Wong, July 22).

APPLE MAGGOT (*Rhagoletis pomonella*) - MAINE - Emergence increased rapidly in seeded cages at Monmouth, Aroostook County. Peak levels will be reached week of July 22. First emerged July 9, somewhat later than average, but numbers up to normal levels. (Boulanger). VERMONT - Peak adult emergence expected week ending August 2. (MacCollom). RHODE ISLAND - Egg laying moderate on unsprayed apples in Washington County. (Mathewson). CONNECTICUT - Emergence continues high; peaked at Glastonbury, Storrs, and New Haven. Captured 429 on 3 false apple lures at New Haven and 424 on 8 at Storrs. (Savos, July 23). NEW YORK - Emergence peaked July 16 at Highland, Ulster County; large numbers of flies appearing daily, but totals decreasing, with more males than females. (N.Y. Wkly. Rpt., July 22). INDIANA - Captured adults decreased from last week's 627 to 341 at Vincennes. (Wong, July 22). WISCONSIN - Trapped 129 on crab apple and 34 on apple July 17-24 at Madison, Dane County. Trapped 80 July 16-24 at Baraboo, Sauk County, and 77 July 16-23 at Oregon, Dane County. (Wis. Ins. Sur.). MINNESOTA - Adults at most trap locations in southeastern area and at Minneapolis and St. Paul; no large numbers. (Minn. Ins. Rpt.).

TEPHRITID FLIES (*Rhagoletis* spp.) - MICHIGAN - Less troublesome in Oceana County than in 1967. Infested samples in Jackson County. (Janes, July 22). WISCONSIN - *R. fausta* infested approximately 90 percent or better of ripening fruit in untreated cherry orchard at Door County site. Most larvae nearly full grown. (Wis. Ins. Sur.). OREGON - *R. completa* adults emerging in Jackson County. (Larson).

PLUM CURCULIO (*Conotrachelus nenuphar*) - GEORGIA - Averaged about 2 adults per tree in plum orchards bare of fruit since July 8 in Bryan County. (Yonce). MICHIGAN - Small larvae in nectarine samples. Activity late last spring. Some egg laying up to 2 weeks ago. (Wooley, July 22).

APHIDS - CONNECTICUT - *Aphis pomi* decreased as terminal foliage continued to harden. (Savos, July 23). DELAWARE - *A. pomi* continues active in some apple orchards. (Boys, July 25). CALIFORNIA - *Hyalopteris pruni* medium on cherry trees at Santa Rosa, Sonoma County. *Chromaphis juglandicola* medium on English walnut trees at Santa Rosa, Sonoma County, and Upper Lake, Lake County. (Cal. Coop. Rpt.). GEORGIA - Yellow forms light on Turner and Tift County pecans; black forms light on Tift County pecans. (Harris et al., July 22). *Myzocallis caryaefoliae* heavy on pecans in Dooly County. (Fulford).

EUROPEAN RED MITE (*Panonychus ulmi*) - MAINE - Increasing rapidly during warm period. Female immatures numerous July 14-20, should be laying eggs this week. (Boulanger). NEW YORK - No sharp increase as expected with prolonged hot period in Niagara County. (N.Y. Wkly. Rpt., July 22). RHODE ISLAND - All stages ranged 3-4 per leaf in sprayed and unsprayed orchards in Providence County. (Field). CONNECTICUT - Still low in all reporting apple orchards except for heavy infestation at New Haven. Weather ideal for mites over past 3 or 4 days. (Savos, July 23). NEW JERSEY - Building up on apple throughout State. (Ins.-Dis. Newsltr.). DELAWARE - Continues active in some apple orchards. (Boys, July 25). MICHIGAN - Numerous in unsprayed plots at research farm July 16 at Fennville, Allegan County. (Janes). INDIANA - High in several apple orchards at Vincennes; one orchard averaged 74.7 active stages per leaf, only 4 on 200

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*Information as to designated laboratories and processing plants may be obtained from an inspector.

**Exempt if not exposed to infestation after cleaning or other prescribed handling.

leaves in unsprayed orchard. (Wong, July 22). MISSOURI - Light on sprayed peach in west-central area. Light to moderate on sprayed delta area peach and unsprayed south-southcentral area peach. Moderate on sprayed peach in southeast and central areas. (Wkly. Rpt. Fr. Grs., July 23).

SPIDER MITES - CALIFORNIA - *Bryobia rubrioculus* medium on apple trees at Chico, Butte County. (Cal. Coop. Rpt.). COLORADO - *Tetranychus urticae* damaged foliage in several treated apple and pear orchards. Ranged up to 20 per leaf. (Bulla). INDIANA - *Tetranychus* sp. high in several apple orchards at Vincennes. One orchard had 143 per leaf; unsprayed orchard had none on 200 leaves. (Wong, July 22). MAINE - *T. urticae* higher than normal in untreated trees at experimental farm in Monmouth, Aroostook County; increased to where webbing interfering with and reducing European red mite activity. (Boulanger, July 20).

APPLE RUST MITE (*Aculus schlechtendali*) - NEW YORK - One outbreak on greening apples in Niagara County. Probably more numerous than usual in eastern area. (N.Y. Wkly. Rpt., July 22).

FILBERTWORM (*Melissopus latiferreanus*) - WASHINGTON - First adult emergence July 3 near Washougal, Clark County. (Wessler, Shanks).

CITRUS

Citrus Insect Situation in Florida - Mid-July - CITRUS RUST MITE (*Phyllocoptruta oleivora*) infested 69 percent of groves (norm 56 percent); 44 percent economic (norm 32 percent). Population advanced and further increase expected. Above normal and will continue in high range through August. Will infest fruit more heavily than leaves. Highest districts west, south, and central. TEXAS CITRUS MITE (*Eutetranychus banksi*) infested 80 percent of groves (norm 76 percent); 54 percent economic (norm 53 percent). At summer peak and near normal high level for July. Decrease expected but some heavy infestations will occur in all districts. Highest districts south, central, west, and north. CITRUS RED MITE (*Panonychus citri*) infested 62 percent of groves (norm 71 percent); 33 percent economic (norm 43 percent). Entered high range but below normal and expected to decrease. Scattered groves will harbor few heavy infestations. Highest districts north and west. BLACK SCALE (*Saissetia oleae*) infested 93 percent of groves (norm 83 percent); 80 percent economic (norm 63 percent). Summer peak attained in early July much higher than average. Gradual decrease expected. Much sooty mold will result where heavy infestations allowed. All districts still high. GLOVER SCALE (*Lepidosaphes gloverii*) infested 72 percent of groves (norm 82 percent); 14 percent economic (norm 32 percent). Sharp decrease took population out of high range. Will continue below normal and drop to low level. Highest districts east and south. Spread and increase of an ARMORED SCALE (*Unaspis citri*) more evident in infested young groves than in bearing groves included in survey. PURPLE SCALE (*L. beckii*) infested 60 percent of groves (norm 78 percent); none economic (norm 14 percent). Lowest July population in 17 years of record; further decrease expected. CHAFF SCALE (*Parlatoria pergandii*) infested 40 percent of groves (norm 73 percent); 2 percent economic (norm 15 percent). Very low for July, may go lower. YELLOW SCALE (*Aonidiella citrina*) infested 66 percent of groves (norm 66 percent); 2 percent economic (norm 13 percent). July population lower than in 4 prior years; little change expected. Highest districts west and east. WHITEFLIES infested 64 percent of groves; 26 percent economic. Expected to be at moderate to high level and slightly above normal. MEALYBUGS infested 81 percent of groves; 32 percent economic. Near normal and expected to remain in high range until mid-August. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

GREEN PEACH APHID (*Myzus persicae*) - CALIFORNIA - Medium on trees at Santa Rosa, Sonoma County. (Cal. Coop. Rpt.).

CITRICOLA SCALE (*Coccus pseudomagnoliarum*) - CALIFORNIA - Medium at Auburn, Placer County. (Cal. Coop. Rpt.).

CITRUS FLAT MITE (Brevipalpus lewisi) - ARIZONA - Light, 1 per grapefruit, on block of trees north of Glendale, Maricopa County. (Ariz. Coop. Sur.).

OTHER TROP. & SUBTROP. FRUITS

PAPAYA FRUIT FLY (Toxotrypana curvicauda) - FLORIDA - Found on papaya July 15 at West Melbourne, Brevard County. (Levan).

SMALL FRUITS

A WEEVIL (Peritelinus oregonus) - WASHINGTON - Larval damage heavy on at least 50 acres of strawberries at Parkdale, Klickitat County. (Bischoff, Shanks, July 19).

BLACK VINE WEEVIL (Brachyrhinus sulcatus) - WASHINGTON - Adults severing single berries and portions of grape clusters in 7-acre vineyard near Prosser, Benton County; 500 to 4,000-pound loss per acre. (Cone).

GRAPE MEALYBUG (Pseudococcus maritimus) - WASHINGTON - Few nymphs moving from 2-year-old wood to fruit clusters, some honeydew on fruit, in unsprayed vineyards in lower Yakima Valley, Yakima and Benton Counties. (Cone).

GRAPE SAWFLY (Erythraspides vitis) - GEORGIA - Moderate to heavy on grape foliage in Harris County. (Salter).

RASPBERRY CANE BORER (Oberea bimaculata) - VERMONT - Damage very heavy on cultivated and wild plants this year. (MacCollom).

CYCLAMEN MITE (Steneotarsonemus pallidus) - MAINE - Light to moderate on about 10 percent of strawberry planting at Westbrook, Cumberland County. (Boulanger, July 20).

ORNAMENTALS

HOLLYHOCK WEEVIL (Apion longirostre) - NEVADA - Collected on hollyhock at Reno, Washoe County, July 21, 1968, by D.L. Horton. Det. by R.C. Bechtel. This is a new State record. Subsequent surveys indicate numbers light to medium in entire Reno and Sparks area. New county records include Fernley, Lyon County, July 24 and Storey County, July 25. (Martinelli, Bechtel).

AN ERIOPHYID MITE (Aculops rhoicis) - ARIZONA - Found in leaf galls in Rhus trilobata at Cherry, Yavapai County. (Carver). Det. by T. Kono. This is a new State record. (Ariz. Coop. Sur.).

ARMORED SCALES - FLORIDA - Rhizaspidiotus dearnessi infested Eupatorium sp. at Tampa, Hillsborough County, June 20, 1968. This is a new county and host record. (Baker, Daniel). Pseudaulacaspis pentagona severe on escallonia July 19 at Orange Park, Clay County. (Collins).

FOREST AND SHADE TREES

DOUGLAS-FIR TUSSOCK MOTH (Hemerocampa pseudotsugata) - ARIZONA - Defoliated Douglas-fir and white fir in Signal Peak area of Pinal Mountains in Gila County. This is a new State record. (Ariz. Coop. Sur.).

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - ALABAMA - Second-generation larvae heavy in new pine tips in 50 young trees in Colbert County; damage heavy on many 3 to 25-foot-tall pines along highways from Huntsville, Madison County, to Moulton, Lawrence County. Populations heavier than usual in many isolated locations in northern area. Larvae 2-8 per tip on some branch tips; killed back 2-6

inches of growth on all branch tips in all trees. Damage serious in 5-acre planting of 5 to 8-foot pines on west side of Huntsville. (Eich et al.).

WHITE-PINE WEEVIL (*Pissodes strobi*) - VERMONT - Heavily damaged spruce and pine at Colechester, Chittenden County. (MacCollom). CONNECTICUT - Injury very evident on white pine and Norway spruce. (Savos, July 24). WISCONSIN - Pupation well underway in leaders of white pine in Juneau County July 17. (Wis. Ins. Sur.).

ADELGIDS (*Adelges* spp.) - NEW JERSEY - *A. abietis* and *A. cooleyi* galls common on spruce in central counties; heavy in Clark area. (Ins.-Dis. Newsltr.). WISCONSIN - *A. cooleyi* galls opened on spruce; alates emerged July 20. Alates common on fir. (Wis. Ins. Sur.). UTAH - *A. cooleyi* galls numerous on some large blue spruce in Beaver Canyon and along road to Kents Lake, Beaver County. (Knowlton, July 23).

PINE NEEDLE SCALE (*Phenacaspis pinifoliae*) - NEW MEXICO - Medium on ponderosa pine at Manzano, Torrance County. (Heninger). WISCONSIN - About 30 percent of eggs unhatched in Rock County July 22. About 80 percent of emerged young producing scales. Nearly all located on 1968 growth. (Wis. Ins. Sur.).

BLACK PINE-LEAF SCALE (*Nuculaspis pini*) - WISCONSIN - Crawlers settled on needles of mugho pine near Arena, Iowa County, July 22; production of scales begun. (Wis. Ins. Sur.). OREGON - This species and *Phenacaspis pinifoliae* heavily damaged lodgepole and mugho pines in State park near Rowena, Wasco County. (Larson).

SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*) - OREGON - Mostly dead larvae and adults taken from elm slash at Nyssa, Malheur County. (Goeden). This is a new county record. Dutch elm disease not yet reported in State. (Westcott). WISCONSIN - Specimen collected in Oconto County June 17 for a new county record. (Wis. Ins. Sur.).

ELM LEAF BEETLE (*Pyrrhalta luteola*) - NEVADA - Second-generation adults laying eggs at Winnemucca, Humboldt County, and at Reno, Washoe County. (Gallaway, Lundahl). ARIZONA - Heavy on Chinese elms at Tucson, Pima County, and in Pinal County. (Ariz. Coop. Sur.). NEW MEXICO - Heavy on elms at Albuquerque; mostly second-generation adults laying eggs and feeding. (Heninger). COLORADO - Adults and larvae abundant in Mesa and Delta Counties; controls needed in most cases. (Bulla). OKLAHOMA - Second-generation larvae continue heavy feeding damage on scattered elms in north-central, northwest, and northeast counties. Heavy on Bryan County elms. (Okla. Coop. Sur.). ALABAMA - Developing larvae damaged elms in De Kalb County. (McQueen). GEORGIA - Severe on American elm in Spalding County. (Tippins). VERMONT - First larvae leaving trees to pupate. (MacCollom). MAINE - Larvae feeding in all southern areas. (Boulanger, July 20).

MIMOSA WEBWORM (*Homadaula anisocentra*) - NEW JERSEY - Activity increasing on mimosa in Middlesex County; severe in Union County area. (Ins.-Dis. Newsltr.). INDIANA - Damage very evident on honeylocust at Crawfordsville, Montgomery County, Lafayette, Tippecanoe County, and Logansport, Cass County. (Huber, Schuder). IOWA - Adults and larvae in several southwest counties. New county records include Page, Mills, Montgomery, Harrison, Monona, and Crawford Counties. (Iowa Ins. Sur.).

FALL WEBWORM (*Hyphantria cunea*) - WEST VIRGINIA - Adults emerging in laboratory, larvae collected June 11, 1968, in Kanawha County. (Cole, July 18). ILLINOIS - Spinning webs around ends of branches on shade trees, especially birch, ash, and elm. (Ins. Sur. Bull.).

GREEN-STRIPED MAPLEWORM (*Anisota rubicunda*) - VERMONT - Larvae damaged maple plantings. Few adults in blacklight trap past 2-3 weeks. (MacCollom).

STRIPED MEALYBUG (*Ferrisia virgata*) - CALIFORNIA - Light on catalpa tree at Redding, Shasta County. Only other outdoor infestation in State is in Imperial County; represents jump of about 700 miles. Shasta County is a new county record. (Cal. Coop. Rpt.).

ASH PLANT BUG (*Neoborus amoenus*) - MINNESOTA - Second generation developing rapidly with many adults appearing. Averaged 5-6 per leaf in one block of ash nursery stock at Lake City, Wabasha County; controls applied. (Minn. Ins. Rpt.).

A CECIDOMYIID MIDGE (*Contarinia virginianiae*) - MAINE - Reported from 2 areas in Presque Isle district. No economic importance but first instance of presence in 13 years. (Boulanger, July 20).

AN ERIOPHYID MITE (*Aceria negundi*) - ARIZONA - Moderate on boxelder leaves at Springtown, Prescott National Forest, Yavapai County. Det. by D. Tuttle. This is a new State record. (Ariz. Coop. Sur.).

HAWAII INSECT REPORT

Turf, Pasture - A GRASS WEBWORM (*Herpetogramma licarsisalis*) eggs, larvae, and adults heavy in recently infested localities of Kahului, Wailuku, Makawao, and Kula on Maui. Damage especially heavy on lawns. Parasitism continues favorable with *Trichogramma semifumatum* (a minute egg parasite) dominant in lawns and pastures. (Miyahira).

General Vegetables - BEAN FLY (*Melanagromyza phaseoli*) surveys on Kauai and Oahu revealed larvae and pupae very light to severe in scattered areas. On Kauai, snap beans at Lawai severely infested; some plants dead. Damage remained heavy on snap beans at Wailua and Kapaa. Damage heavy on yard-long beans at Wailua; light on nanea (*Vigna marina*) at Kapaa and Lihue. On Oahu, intensive spraying on snap beans at Waiahole where infestation severe in mid-June. Lightly infested snap beans at Makaha, yard-long beans in backyards at Ewa, lablab beans (*Dolichos lablab*) and yard-long beans at Honolulu. (Ikehara et al.). SWEETPOTATO VINE BORER (*Omphisa anastomosalis*) larvae light on sweetpotatoes in windward areas of Oahu; heavy in small planting at Koko Head. (Funasaki). SOUTHERN GREEN STINK BUG (*Nezara viridula*) adults heavy on tomato, cucumber, snap bean, and chrysanthemum from Omaopio to upper Kula, Maui, at 1,200-4,000 feet elevation. Apparently moving from dry weeds to cultivated areas. Sprays being intensified. Adults heavy; resting on walls and electric poles at Pukalani, Maui. (Yamamoto et al.).

Forest and Shade Trees - KIAWE FLOWER LOOPER (*Cosymbia serrulata*) collections in 41 light traps indicate adults remained low on Oahu; averaged 1.2 per trap, highest (15) at Waipahu. (Richardson).

Beneficial Insects - Adults of a TACHINA FLY (*Trichopoda pennipes* var. *pilipes*) common on flowers of garden spurge (*Euphorbia hirta*) in localized area at Ewa, Oahu. (Funasaki).

Miscellaneous Insects - Adults of a GRASSHOPPER (*Trimerotropis pallidipennis*) light in 2-acre dried grass area near runway at Barbers Point Naval Air Station, Ewa, Oahu. (Yanamura, Olson).

MAN AND ANIMALS

MOSQUITOES - MAINE - Very heavy and annoying at Cape Elizabeth and Scarborough, Cumberland County. Probably worst year to date. (Boulanger, July 20). VERMONT - Very annoying. (MacCollom). RHODE ISLAND - *Culex* spp. and *Aedes* spp. prevalent throughout State. (Field). MICHIGAN - Still numerous. Large adult populations (one or more *Aedes* sp. breeding in woodland ponds) caused major annoyance in many counties. (Jones, July 22). INDIANA - Annoyance, mostly by *Aedes* spp., severe in northwestern corner and other sections throughout northern area of State. Populations reported from worst in 15 years to worst ever. (Huber, Matthew). WISCONSIN - Remain high; biting severe even in some upland areas. Rainfall past week should insure good development sites for another week. (Wis. Ins. Sur.). MINNESOTA - *A. vexans* in 1,832 of 2,292 larval collections made July 14-20; *Culex pipiens*, *C. restuans*, *C. salinarius*, *C. tarsalis* present; *Uranotaenia sapphirina* in 4 collections. In bite collections, *A. vexans* accounted for 75 percent with several "single brooded" *Aedes* well represented. Catch of 2 *Psorophora horrida* unusual; species rare in State. *A. vexans* accounted for 31,876 of 38,856 females collected. *Mansonia perturbans* second with 1,355; peak populations probably present. Light trap catches increased significantly starting July 23-24 due to broods from heavy rains July 12-14. High temperatures permitted rapid development; controls not applied to all breeding sites in time to prevent emergence. Larvae very high due to heavy egg laying of late June. (Minn. Ins. Rpt.). WYOMING - *Aedes* spp. 40-50 per head on beef herd in Albany County. (Lloyd). NEVADA - *A. nigromaculis* adults heavy in Fernley area, Lyon County. (Bechtel, Martinelli). NEW MEXICO - Annoying in most areas after rains, especially around alfalfa and bosque (wooded) areas. (N.M. Coop. Rpt.).

SCREW-WORM (*Cochliomyia hominivorax*) - Total of 187 cases in U.S. July 14-20 as follows: TEXAS - Atascosa 13, Bee 5, Bexar 1, Brewster 3, Brooks 12, Caldwell 1, Callahan 1, Concho 1, Crockett 1, De Witt 1, Dimmit 1, Duval 1, Edwards 1, Frio 2, Gillespie 1, Gonzales 1, Hidalgo 5, Jim Hogg 16, Jim Wells 12, Karnes 7, Kenedy 3, Kerr 2, Kinney 1, Kleberg 4, Live Oak 12, Mason 1, Maverick 1, McMullen 2, Nueces 1, Pecos 2, Refugio 6, San Patricio 5, Starr 16, Terrell 19, Tom Green 1, Uvalde 2, Val Verde 1, Willacy 2, Wilson 2, Zapata 1, Zavala 1; CALIFORNIA - Imperial 1; ARIZONA - Cochise 3, Graham 2, Pinal 3, Santa Cruz 2, Yavapai 1, Yuma 2; NEW MEXICO - Hidalgo 2. Total of 372 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Baja California 1, Territorio sur de Baja California 65, Sonora 74, Chihuahua 26, Coahuila 113, Nuevo Leon 63, Tamaulipas 30. Total of 30 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 68,696,000; New Mexico 1,280,000; Arizona 11,480,000; California 500,000; Mexico 61,058,000. (Anim. Health Div.).

FACE FLY (*Musca autumnalis*) - MARYLAND - Heavy in central area on horses and cattle. Ranged 3-125 per head on cattle in Frederick and Baltimore Counties. (U. Md., Ent. Dept.). WEST VIRGINIA - Ranged 15-50 per face on cattle. (Dorsey, July 22). VIRGINIA - Light on beef and dairy cattle in Spotsylvania County. (Allen). TENNESSEE - Continues annoying in midstate area; averaged 15-30 per head in 3 herds examined. (Quillin). SOUTH CAROLINA - Difficult to control this season in Pickens County. (Nettles, July 23). GEORGIA - Very annoying to beef cattle in Heard County. (Summers, Nolan). OHIO - Heavy and annoying cattle throughout State. Ranged 40-50 per face with "tear streaking" on some animals in herd of 30 cows and 15 calves in Delaware County. (Lyon). Averaged 40 per face on dairy herd in Ross County. (Rose). INDIANA - Continues severe, especially in central and northern areas; ranged 15-100 (average 40) per animal. (Huber). ILLINOIS - Average per animal by district: Southeast 5, west 6, southwest 29, northwest 2, west-southwest 22. (Ill. Ins. Rpt.). Continues moderately high on pastured cattle in central and south-central sections. In area between U.S. Highway 460 and State Highway 9, pastured cattle averaged 20-40 flies each. (Ins. Sur. Bull.). MISSOURI - Averaged 22.6 per head on 40 cows in large herd in northwest area; averaged 14.8 per head on 30 calves. (Munson). WISCONSIN - Light to moderate annoyance in most counties. (Wis. Ins. Sur.). NORTH DAKOTA - Light on

most herds in State. Ranged up to 5 per face in Steele County; averaged less than 1 per face in all counties surveyed. Collected in Steele, Griggs, Foster, Eddy, Sheridan, McLean, Oliver, Morton, Sioux, Hettinger, Adams, Bowman, Slope, Billings, and Golden Valley Counties. All but Foster are new county records. (Brandvik). SOUTH DAKOTA - Low, 1-3 per face, on untreated herd south of Geddes, Charles Mix County. (Alleman). WASHINGTON - Averaged 3-4 per face (maximum 30) on cattle in Walla Walla County; 5 per face in Whitman County with 12 per face near Pullman. (Telford).

HOUSE FLY (Musca domestica) - GEORGIA - Large numbers breeding under caged layers throughout State. (Nolan).

HORN FLY (Haematobia irritans) - WYOMING - Averaged 50-60 per head on beef herd in Albany County. (Lloyd). NORTH DAKOTA - Heavy on beef herds in western counties; 800 per head on some animals and 2,000+ per head on several bulls. Counts per head on beef herds by county: Steele, Griggs, Eddy, and Sheridan 10-100 (average 50); Foster 10-50 (average 25); McLean 120-300 (average 150); Morton 300-400 (average 350); Billings 100-800 (average 400). (Brandvik). SOUTH DAKOTA - High on untreated herd of Herefords south of Geddes, Charles Mix County; 75-300 per side on cows, 350-400 per side on bulls, 45-50 per side on calves. (Alleman). NEBRASKA - Ranged 350-400 per head on 8 herds pastured in Keith County. (Campbell). OKLAHOMA - H. irritans ranged 400-800 per head (average 600) on cattle checked in northwest Oklahoma County. Medium to heavy on cattle in Craig and Mayes Counties; light to medium in Osage and Cleveland Counties. (Okla. Coop. Sur.). ILLINOIS - Average per animal by district: Southeast 345, west 81, southwest 17, northwest 18, west-southwest 123. (Ill. Ins. Rpt.). WISCONSIN - Light to moderate annoyance in most counties. (Wis. Ins. Sur.). WEST VIRGINIA - Ranged 5-50 per square-foot area on cattle withers. (Dorsey, July 22). MARYLAND - Ranged 3-50 per head on cattle in Frederick County. (U. Md., Ent. Dept.). VIRGINIA - Adults moderate on beef and dairy cattle in Spotsylvania and Hanover Counties. (Allen). GEORGIA - Heavy on untreated beef and dairy cattle in most sections. (Nolan). MISSISSIPPI - Varying infestations probably due to efficient use of controls. Averages per head by county: Hinds, 25 on 327 head; Adams, 300 on 200; Washington, 10 on 40; Pike, 50 on 175; Issaquena, 50 on 200; and Yazoo, 25-30 on 100 head. (Dinkins).

STABLE FLY (Stomoxys calcitrans) - MARYLAND - Light in central area due to hot, dry weather past 3 weeks. (U. Md., Ent. Dept.). VIRGINIA - Light to moderate on dairy cattle in Spotsylvania County. (Allen). INDIANA - Increasing rapidly in central and northern districts; ranged 2-18 per leg on pastured cattle. (Huber). ILLINOIS - Average per animal by district: Southeast 5, west 3, southwest 44, northwest 0, west-southwest 31. (Ill. Ins. Rpt.). WISCONSIN - Annoyed cattle moderately in most areas. Some severe annoyance in Calumet, Brown, and Chippewa Counties. (Wis. Ins. Sur.). NEBRASKA - Averaged 20-25 per leg on feedlot animals near Lincoln, Lancaster County. (Campbell).

TABANID FLIES - MISSISSIPPI - Tabanus spp. very heavy in Yazoo County; averaged 2 per head in most herds. (Dinkins). OKLAHOMA - Tabanus spp. ranged 3-7 per cow in Payne County. (Okla. Coop. Sur.). WYOMING - Hybomitra frontalis averaged 0.5-1.0 per head on beef herd in Albany County. (Lloyd). NORTH DAKOTA - Tabanus lineola ranged up to 10 (average 5) per head on beef herds in Steele, Foster, and Sheridan Counties. (Brandvik). MINNESOTA - Deer flies very numerous and ir. ble-some in most areas, particularly near wooded, brushy, and swampy areas. (Minn. Ins. Rpt.). WISCONSIN - Deer and horse flies numerous; severely annoyed cattle in many areas, also annoyed humans. (Wis. Ins. Sur.). RHODE ISLAND - Tabanus spp. prevalent and Chrysops spp. common throughout State. (Field).

A LOUSE FLY (Lipoptena mazamae) - OKLAHOMA - Buildup in east-central area averaged 1,500 per mature deer. (Okla. Coop. Sur.).

LONE STAR TICK (Amblyomma americanum) - OKLAHOMA - Seed ticks very heavy in east-central and southeast areas; minimum of 300 per 25-yard drag. Adults very few. (Okla. Coop. Sur.).

HOUSEHOLDS AND STRUCTURES

OLD-HOUSE BORER (*Hylotrupes bajulus*) - VIRGINIA - Single specimen collected in Spotsylvania County for a new county record. (Allen).

ASIATIC OAK WEEVIL (*Cyrtopistomus castaneus*) - MISSOURI - Invaded Madison County home for a new county record. (Munson).

BENEFICIAL INSECTS

LADY BEETLES - WYOMING - Adults and larvae averaged 20 per 100 sweeps on alfalfa in Washakie, Fremont, Hot Springs, and Big Horn Counties. (Parshall). UTAH - Adults and larvae generally low on Millard County alfalfa: averaged less than 1 per 10 sweeps. (Knowlton, July 23).

MELYRID BEETLES (*Collops* spp.) - UTAH - Conspicuous in some Millard County alfalfa fields past 2 weeks. (Knowlton, July 23).

GREEN LACEWINGS (*Chrysopa* spp.) - ARKANSAS - Increased on Jefferson County cotton, especially in areas with rain. (Boyer).

HETEROPTEROUS PREDATORS - WYOMING - *Nabis* spp. adults averaged 27 per 100 sweeps on alfalfa in Washakie, Fremont, Hot Springs, and Big Horn Counties. (Parshall). ARKANSAS - *Nabis* spp. increased slightly on cotton. *Orius insidiosus* adults and nymphs increased in Jefferson County compared with 2 weeks ago, especially in areas with rain. *Geocoris punctipes* continues very light in cotton. (Boyer).

ALKALI BEE (*Nomia melanderi*) - WASHINGTON - Nesting site loss about 25 percent north of Sunnyside, Yakima County, due to heavy showers July 19. (Menke). Activity started in late May and early June at Gardena, Walla Walla County, reached peak in early July, but almost ceased by July 24. Late-starting sites still active and providing good foraging populations in nearby alfalfa seed fields. Nesting sites north of Pasco, Franklin County, became active June 13, but were damaged by sprays on mint in early July before reaching peak of renesting activity. Nesting sites east of Othello, Adams County, reached peak of renesting activity by July 19 when rain caused some damage. (Johansen, Eves).

A LEAFCUTTING BEE (*Megachile rotundata*) - WASHINGTON - First-generation adults first observed emerging July 16 from Spring-brood cells at Gardena, Walla Walla County, where incubation began first half of May; situation similar in other areas where incubation early. (Johansen, Eves).

A CINNABAR MOTH (*Tyria jacobaeae*) - WASHINGTON - Released in 1966 near Amboy, Clark County, to control tansy ragwort. Infested area now about 1 acre larger than in 1967. (Shanks).

A PHYTOSEIID MITE (*Typhlodromus occidentalis*) - WASHINGTON - Released in Spokane County to aid in control of *Tetranychus mcdanieli* on fruit tree. (Kruiswyk, Retan, July 19).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BOLL WEEVIL (*Anthonomus grandis*) - TEXAS - In High Plains area, very light in Garza and southeast Martin Counties. Infested 25 percent of fields in Howard County; punctured squares 21 percent in highest infestation. Infestations in 4 additional fields inside control zone in Kent County. Infested 19 of 35 fields week ending July 19; economic in at least 2 of these fields. Infested 15 of 34 fields surveyed inside control zone in Dickens County; punctured squares 17 percent in highest infestation. (Almand). For Boll Weevil in other areas see page 728.

GRASSHOPPERS - WASHINGTON - Several species moderate in several fields at Ellensburg and Kittitas in Kittitas County. (Retan, July 19). NEVADA - Melanoplus bivittatus and M. packardii heavy and damaging various ornamentals at Reno and Steamboat, Washoe County. (Heringer, Ting). UTAH - Nymphs averaged 40 per 10 sweeps on alfalfa at Lynndyl and Abraham, Millard County. (Davis, Knowlton, July 23). NEW MEXICO - About 300,000 acres of rangeland planned for control program in Quay, De Baca, and Guadalupe Counties. (N.M. Coop. Rpt.). WYOMING - Aulocara elliotti oviposition begun at Guernsey study area of Platte County. Ageneotettix deorum mostly adults; few adults of Trachyrhachys kiowa, Cordillacris crenulata, and Phlibostroma quadrimaculatum appearing; Opeia obscura and M. gladstoni still nymphs. (Pfadt). SOUTH DAKOTA - Little change in infestation in Sanborn, Davison, and Hanson Counties. M. bivittatus and M. differentialis ranged 20-35 per square yard (similar to those reported July 5) in alfalfa fields and margins; highest up to 40 per square yard. In eastern section of infestation in Hanson and McCook Counties, M. femurrubrum dominant whereas M. differentialis and M. bivittatus remained dominant further west. M. sanguinipes low. All species above are fourth instar to adult except M. femurrubrum which is in second instar to adult; all mostly in later stages. Hatch probably completed. Moderate to abundant from north of Gann Valley, Buffalo County, through Jerauld County to northern Hanson and McCook Counties. Apparent damage confined to alfalfa. Some damage expected on corn as season progresses. (Burge). NORTH DAKOTA - Generally noneconomic throughout State; economic in few scattered areas. Marginal counts up to 30 (average 2) per square yard while field counts up to 20 (average less than 1) per square yard in some alfalfa and idle fields in Adams, Hettinger, Stark, and Dunn Counties. M. bivittatus, M. sanguinipes, M. packardii, M. differentialis, and M. femurrubrum dominant July 19; first to fifth instars. (Grasser). Field counts up to 25 per square yard in some soil bank fields and marginal counts up to 25 (average 5) per square yard in Pierce County. Field and marginal counts up to 6 (average less than 1) per square yard in McHenry and Ward Counties. M. sanguinipes, M. bivittatus, M. packardii, and M. femurrubrum dominant; first instar to adult. Less than 1 per square yard in range areas in McKenzie County. Field counts less than 1 per square yard while some margin counts up to 4 per square yard in cropland areas in Williams, Divide, and Mountrail Counties. M. sanguinipes and M. packardii development ranged from first through fourth instar; some M. femurrubrum third instar. (Toczek). MINNESOTA - Ranged 18-45 per square yard on roadsides in Chicago County along U.S. Highway 61. M. sanguinipes adults, M. packardii, Camnula pellucida, Arphia spp., and second and third instar M. femurrubrum present. Feeding on roadside grasses occasionally heavy, but few in adjacent crops. Up to 30 per square yard on roadsides in Big Stone and Stevens Counties. First and second instar M. femurrubrum not heavy in adjacent crops in this area. In some areas of south-west, west-central, and central districts small adults of "slant-faced" species up to 45 per square yard on roadsides; normally not considered economic. (Minn. Ins. Rpt.).

GYPSY MOTH (Porthetria dispar) - NEW YORK - Pupal and larval stages in Suffolk County. (N.Y. Wkly. Rpt., July 22). RHODE ISLAND - Adults moderate in Providence County. (Reli).

JAPANESE BEETLE (Popillia japonica) - GEORGIA - Infested various ornamentals in several northern counties. (Coleman, July 22). MARYLAND - Heavily defoliated red raspberry planting at Wye Mills, Talbot County. (U. Md., Ent. Dept.). NEW JERSEY - Active on weeping willow at New Shrewsbury, Monmouth County. (Ins.-Dis. Newsltr.). RHODE ISLAND - Numerous scattered reports of adults in Providence, Newport, and Bristol Counties. (Reli).

PINK BOLLWORM (Pectinophora gossypiella) - NEW MEXICO - Trapped 36 in 20 sex lure traps in extreme southern Dona Ana County for July 21-24. (Adams). Negative July 19 and July 23 at 3 locations in Leasburg, Brazito, and Anthony. Captured 5 moths July 19 and 8 July 23 at Canutillo; 9 moths July 19 and 2 July 23 in 6 traps at Vado. Negative in bloom counts in Dona Ana and Luna Counties. (Dickerson, Eubank). ARIZONA - Found 5 rosetted blooms past 2 weeks at Marana, Pima County.

(McLain). Buildup in treated and untreated fields at Yuma; infested 75 percent of a Yuma County field despite 3 control applications. (Ariz. Coop. Sur.).
NEVADA - Negative during blossom survey conducted in Pahrump Valley, Nye County. (Zoller et al.). Pest problems very light on cotton in Pahrump Valley; big-eyed bugs, melyrid beetles, damsel bugs, and lacewings abundant. (Nev. Coop. Rpt.).

WHITE-FRINGED BEETLES (*Graphognathus* spp.) - ALABAMA - Larvae heavy in soybean fields near Gosport July 16 in Clarke County; destroyed 25 percent of plants. First report of serious damage to soybeans in Clarke County. (Lemons).

INSECT DETECTION

New State Records

HOLLYHOCK WEEVIL (*Apion longirostre*) - NEVADA - On hollyhock at Reno, Washoe County. Collected by D.L. Horton July 21, 1968. Det. by R.C. Bechtel. (p. 737).

AN ERIOPHYID MITE (*Aculops rhoicis*) - ARIZONA - In leaf galls in Rhus trilobata at Cherry, Yavapai County. Det. by T. Kono. (p. 737).

DOUGLAS-FIR TUSsock Moth (*Heemerocampa pseudotsugata*) - ARIZONA - Defoliated Douglas-fir and white fir in Signal Peak area of Pinal Mountains in Gila County. (p. 737).

AN ERIOPHYID MITE (*Aceria negundi*) - ARIZONA - On boxelder at Springtown, Prescott National Forest, Yavapai County. Det. by D. Tuttle. (p. 739).

New County Records

WESTERN CORN ROOTWORM (*Diabrotica virgifera*) - ILLINOIS - Brown County. (p. 724).

ALFALFA WEEVIL (*Hypera postica*) - MICHIGAN - Lapeer County. OKLAHOMA - Sequoyah County. OREGON - Marion County. WASHINGTON - Spokane County. (p. 725).

A JAPANESE WEEVIL (*Calomycterus setarius*) - IOWA - Mills County. (p. 725).

HOLLYHOCK WEEVIL (*Apion longirostre*) - NEVADA - Lyon and Storey Counties. (p. 737).

AN ARMORED SCALE (*Rhizaspidiotus dearnessi*) - FLORIDA - Hillsborough County. (p. 737).

SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*) - OREGON - Malheur County. WISCONSIN - Oconto County. (p. 738).

MIMOSA WEBWORM (*Homadaula anisocentra*) - IOWA - Page, Mills, Montgomery, Harrison, Monona, and Crawford Counties. (p. 738).

STRIPED MEALYBUG (*Ferrisia virgata*) - CALIFORNIA - Shasta County. (p. 739).

FACE FLY (*Musca autumnalis*) - NORTH DAKOTA - Steele, Griggs, Eddy, Sheridan, McLean, Oliver, Morton, Sioux, Hettinger, Adams, Bowman, Slope, Billings, and Golden Valley Counties. (p. 740-741).

OLD-HOUSE BORER (*Hylotrupes bajulus*) - VIRGINIA - Spotsylvania County. (p. 742).

ASIATIC OAK WEEVIL (*Cyrtopistomus castaneus*) - MISSOURI - Madison County. (p. 742).

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SURVEY METHODS

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Part IX

Additional copies of Parts I through IX of this bibliography are available from Survey and Detection Operations.

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

CORN LEAF APHID numerous on corn in North Dakota, Nebraska, Wyoming, Colorado, and New Mexico; 30,000 acres treated in New Mexico. (p. 753). CORN EARWORM major pest of soybeans in Arkansas; very heavy across peanut belt of Georgia. GREENBUG heavy on sorghum in areas of Texas; spotted and heavy on grain sorghum throughout most of Nebraska. POTATO LEAFHOPPER heavy on alfalfa in southeast and central Indiana and east-central Missouri; economic in western Pennsylvania. (pp. 754-755).

EUROPEAN CORN BORER flights very heavy in southern Delaware; heavy second-generation infestations expected in east-central and southeast Indiana. (p. 755). CORN ROOTWORMS increasing and damaging corn in some areas of Illinois. (p. 756).

PEA APHID significant on alfalfa in areas of Wyoming and Colorado. (p. 759). RED-NECKED PEANUTWORM very heavy and damaging peanuts in Payne County and southwest Oklahoma. (p. 760).

BOLL WEEVIL increasing at Florence, South Carolina, and in south-central delta area of Mississippi; egg laying heavy in western Tennessee. BOLLWORM moths very heavy in light traps at Florence, South Carolina; larvae damaging in western Tennessee and increasing in Yazoo County, Mississippi. (pp. 760-761). SPIDER MITE damage to cotton worst ever in western Tennessee; infestations continue serious in central and northern Alabama. (p. 762).

GREEN PEACH APHID heaviest in 10 years on potatoes in southern Pennsylvania; increasing rapidly on tomatoes and peppers in Monroe County, New York. (p. 763).

SPRUCE BUDWORM defoliation severe on many balsam fir stands in St. Louis County, Minnesota. (p. 768).

MOSQUITO problem will be worst in 10 years in Minnesota. Total of 154 SCREW-WORM cases reported in southwest U.S. July 21-27. FACE FLY heavy in Indiana, annoying dairy cattle in northern New Jersey. (p. 771). HORN FLY AND TABANID FLIES heavy and annoying livestock in several States. (p. 772).

Detection

● A POWDER-POST BEETLE reported in Florida; first established infestation in continental United States. (p. 772).

● A GRASSHOPPER reported for first time in Hawaii. This is a new Western Hemisphere record but the species is not known to occur in the continental United States. (p. 776).

For new county records see page 765.

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For Weather see page 777.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ASTER LEAFHOPPER (Macrostelus fascifrons) - MINNESOTA - High, averaged 770 (up to 1,400) per 100 sweeps on flax in northwest district. Probably too late in season for serious problems on flax. Few high counts yellowing fields in Norman County. (Minn. Ins. Rpt.). MICHIGAN - Remains problem especially in late planted celery and lettuce. (Bath, July 29).

CORN LEAF APHID (Rhopalosiphum maidis) - NEW HAMPSHIRE - Increasing rapidly on emerging tassels at Durham, Strafford County, and at Hudson, Hillsborough County; heavily infested up to 20 percent of tassels. (Sutherland, July 29). NEW YORK - Sweet corn aerially sprayed in Hudson Valley. (N.Y. Wkly. Rpt., July 29). NEW JERSEY - Evident on corn tassels in several central and southern counties. (Ins.-Dis. Newsltr.). MARYLAND - Infestations ranged 30-50 percent in lower Eastern Shore fields and ranged 20-40 percent, most feeding in tassels, in central area. Heavy near Port Republic, Calvert County; stunted 25 acres of sorghum. (U. Md., Ent. Dept.). VIRGINIA - Light to heavy on tassels of corn in Montgomery, Floyd, Patrick, Carroll, and Pulaski Counties. (Allen). Detected on Johnson grass, but not on corn in Nelson and Amherst Counties. (Rowell). OHIO - Colonies continued to develop July 24-29. Noneconomic on corn in most areas. Infested some tasseling corn in Sandusky and Huron Counties (Maddy, Wells); some heavily infested sorghum required treatment in Licking County (Parrish). Corn height averaged 62 inches in State and crop nearly 45 percent silked as of July 29. (Tucker). MICHIGAN - Problem remains about same as last week. Where moisture sufficient in field corn areas, no damaging numbers seem imminent. (Jones, July 29). INDIANA - Colonies of 5-15 alates and 25-200 apterae per whorl completely infested nontasseled corn in southeast, east-central, central, and west-central districts; 80-90 percent of corn tasseled in west-central and central districts and 40-60 percent of corn nontasseled in east-central and southeast districts. Yield loss may be moderate to heavy in latter 2 districts. Colonies covering from one-third to three-fourths of tassel found on 2-14 (average 4) percent of tasseled corn surveyed in central districts. (Huber). ILLINOIS - Decreasing in State. Based on rating of 1-10 (1 no aphids, 10 heavily infested), average rating by district: West-southwest 2.0, west 2.4, and northwest 2.5. (Ill. Ins. Rpt.).

WISCONSIN - Tassel infestation decreased but colonies forming on fresh silks. In most cases, colony size not high enough to affect pollination, but numbers high enough in Waukesha County to anticipate controls. (Wis. Ins. Sur.). MINNESOTA - Nearly all corn plants with colonies in whorls or tassels. Colony size generally low; none high enough to affect pollination. (Minn. Ins. Rpt.). IOWA - Averaged less than 101 per plant in 31 stops in northern third of State; ranged from 101+ to less than 500 per plant in 3 other stops. (Iowa Ins. Sur.). NEBRASKA - Generally declining, 25-2,200 per plant, in 14 cornfields in Cumming County; 80-95 percent of plants infested. Light in 6 fields checked in York, Fillmore, Thayer, Nuckolls, Clay, and Hamilton Counties. (Keith). NORTH DAKOTA - Ranged up to 1,000 (average 165) per emerging tassel on corn in Richland County. Predators (lady beetles and green lacewings) 2-3 per plant in same fields. Populations should decrease as tassels emerge. (Brandvik). WYOMING - Numbers variable, 0-1,000 per plant, in 18 cornfields checked in Goshen, Platte, and Laramie Counties; infested plants ranged 10-95 percent. Ranged 50-1,500 per plant on 90 percent of sorghum plants checked at experiment station in Torrington, Goshen County. (Parshall). COLORADO - Up to 2,000 per corn plant in Weld, Morgan, Larimer, and Boulder Counties; controls recommended. (Johnson). NEW MEXICO - Probably this species unusually heavy in grain sorghum and broomcorn fields in Roosevelt and Curry Counties; 30,000+ acres treated in Roosevelt County. (Smith). Mostly light to heavy and spotted in grain sorghum in Roswell area, Chaves County. (Mathews). ARIZONA - Damage heavy to young 10-acre sorghum field at Safford, Graham County; no controls applied. (May, Pearson).

CORN EARWORM (Heliothis zea) - NEW YORK - No moths trapped as of July 26, no larvae detected in Hudson Valley. (N.Y. Wkly. Rpt.). DELAWARE - First instars on lima beans in one area of Sussex County; adults averaged about 1 per night in blacklight trap collections. (Burbutis). MARYLAND - Remains light on Eastern

Shore. Some light damage to garden peppers near Greenbelt, Prince Georges County. (U. Md., Ent. Dept.). SOUTH CAROLINA - Generally heavy throughout Dillon County; infested 30-90+ percent of ears in one field. (Bauer). GEORGIA - Very heavy across peanut belt. (French). INDIANA - Infestations scattered and light (2-8 percent) in early field corn in southern two-thirds of State. Larvae mostly second and third instars as of July 31. (Huber). MISSOURI - Larvae infested 80 percent of ears in cornfield in southwest area. (Hanning). ARKANSAS - Major pest of soybeans in State. Highest larval counts 8-10 per 10 row feet in Jackson, Woodruff, and Cross Counties. Survey negative in most fields. (Boyer). TEXAS - Larvae easily found in grain sorghum heads throughout central blacklands. Extensive damage limited to very few fields. (Thomas). OKLAHOMA - Averaged 1 per head on grain sorghum in several southwest counties; light, 0.5 per plant, in peanuts in Stephens and Bryan Counties. (Okla. Coop. Sur.). NEBRASKA - Very light, less than 1 percent of corn plants infested in 14 Cuming County fields. (Keith, Hill). NORTH DAKOTA - Full-grown larvae 1 per plant on 50 percent of sweet corn plants near Hunter, Cass County. (Frye). COLORADO - Larvae 0-4 per silk on corn in Morgan County. (Johnson). IDAHO - Ear infestations near 100 percent in untreated early fields of sweet corn in Canyon County. (Homan). ARIZONA - Larvae averaged 1 per ear on 3 acres of sweet corn at Safford, Graham County. (Pearson).

GREENBUG (*Schizaphis graminum*) - TEXAS - Generally infested grain sorghum in Panhandle. Heavy over large areas of High Plains. As high as 4,000 per leaf on lower leaves of sorghum in Potter County; infested sorghum in Taylor and Jones Counties in Rolling Plains, heavy in some fields near Hampton. (Daniels et al.). NEBRASKA - Spotted and heavy numbers remain on grain sorghum in east, southeast, central, south, and southwest crop districts; large acreages treated. Ranged 20-2,200 (average 850) per leaf in 12 fields examined in Seward, York, Fillmore, Thayer, Nuckolls, Clay, and Hamilton Counties. Many late plantings of forage sorghum destroyed. Averaged about 4,500 per plant (4 feet high) in Fillmore County field; no apparent damage. Decreasing in some grain sorghum fields. (Keith).

HORNWORMS - GEORGIA - Light to moderate on tobacco sucker growth in Tift County. (French). DELAWARE - *Manduca* spp. larval feeding heavy on tomatoes in one area of New Castle County; adults averaged 5 per night in light trap collections last period in Sussex County. (Burbutis). NEW MEXICO - *Manduca* sp. problem on tomatoes in home gardens in Las Cruces, Dona Ana County. (N.M. Coop. Rpt.).

PAINTED LADY (*Vanessa cardui*) - MINNESOTA - Light on thistle-infested soybeans in some central district fields. Soybeans large enough to withstand light feeding damage. Adults numerous and laying eggs on Canada thistle; some small larvae found. (Minn. Ins. Rpt.). MICHIGAN - Larvae leaving thistles and feeding on field beans; found in Saginaw County bean field. (Janes, July 30).

PICKLEWORM (*Diaphania nitidalis*) - GEORGIA - Light in cucumbers and squash in Spalding County; heavy in Butts County. (Dupree).

POTATO LEAFHOPPER (*Empoasca fabae*) - VERMONT - Prevalent on alfalfa; yellowing noted along some field margins. (MacCollom). PENNSYLVANIA - Economic in many alfalfa fields in western area; averaged 0.4-0.9 per sweep in central counties. (Adams, July 24). DELAWARE - Continues buildup on lima and snap beans in commercial plantings. (Boys, Aug. 1). MARYLAND - Continues to increase throughout State. Ranged up to 50-75 per sweep on alfalfa in central area. (U. Md., Ent. Dept.). WEST VIRGINIA - Severe foliar damage on unsprayed potatoes in Webster and Braxton Counties. (Gillespie). OHIO - More damage to alfalfa expected as populations increase. Less than 1-3 per sweep in Wayne County; some damage. Severe yellowing and stunting expected to be widespread in State if hot, dry weather occurs in August. (Rose). INDIANA - Damaging levels reached in southeast and central areas. Nymphs 3-29 (average 9) per sweep on third-growth alfalfa (3 inch to bud stage). Cool temperatures and extensive shower activity past week minimized yellowing of alfalfa in most of above areas; much yellowing expected next few weeks if hot, dry conditions return. (Huber). ILLINOIS -

Extremely abundant in soybeans. (Ins. Sur. Bull.). MISSOURI - Heavy, 100-800 per 10 sweeps, in alfalfa in east-central area; discoloration or yellowing in most fields ready for cutting. (Munson).

POTATO PSYLLID (*Paratrioza cockerelli*) - WYOMING - Adults appearing in fields treated with systemic at planting time. Averaged 0.38 per 100 sweeps in 5 fields in Goshen and Laramie Counties. (Parshall).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - NEBRASKA - Light, 25 per 20 sweeps, in Cuming County alfalfa field. (Keith, Hill). WYOMING - Undetected in alfalfa in Platte, Goshen, and Converse Counties. (Parshall).

TOBACCO BUDWORM (*Heliothis virescens*) - MARYLAND - Damaged tobacco plants ranged 1-4 per 100 plants. (U. Md., Ent. Dept.).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NEW YORK - Ears ranged from nearly uninfested in sweet corn plantings treated on time to moderately infested in Hudson Valley; first brood present as older larvae, pupae, and new adults. No moths, eggs, or signs of second brood in one whorl stage planting July 29 at New Paltz; moths in 2 traps averaged less than 2 per night. Second generation less evident than predicted; unseasonable coolness probably main factor. Hatching expected in early August. (N.Y. Wkly. Rpt.). NEW JERSEY - Moths decreased slightly in blacklight trap collections compared with last week. Second-generation moths abundant in grass and weeds bordering fields July 31; potential for infestations high. Second-generation larvae could be damaging to late-planted corn that has not tasseled. (Ins.-Dis. Newsltr.). DELAWARE - Adult flights continue very heavy in Sussex County; moths averaged 140+ per night in blacklight trap collections last week. (Burbutis). MARYLAND - Larvae 1-5 per plant on 50-100 percent of stands on lower Eastern Shore. Infested stands up to 30-80 percent in central area. (U. Md., Ent. Dept.). VIRGINIA - Second-generation larvae and damage detected on corn in Appomattox, Buckingham, Nelson, Amherst, and Rockbridge Counties. (Rowell). INDIANA - Adults laying eggs on late corn throughout State. Adult emergence, based on blacklight trap catches, late in east-central and southeastern areas. Emergence began July 23 in south-central and east-central districts and July 28 in southeast district. Heavy second-generation infestations expected since 40-60 percent of corn not yet tasseled in east-central and southeast districts. (Huber). ILLINOIS - Counts per 100 plants averaged 8 larvae and 12 infested plants in west district and 3 larvae and 8 infested plants in west-southwest district. Pupation about 90 percent and emergence 80 percent in east-southeast area. (Ill. Ins. Rpt.). Egg laying just begun in central area; will not be underway for several days in north-central and northern areas. First generation light in these areas. Severe second-generation damage not expected. Second-generation moths numerous where first generation infested many fields in south-central area; egg laying will progress rapidly next 2 weeks. May severely damage some late-planted corn. (Ins. Sur. Bull.).

WISCONSIN - Numerous in Dunn, St. Croix, and Pierce Counties. Infested 16-28 percent of plants; larvae 2-3 per plant on most plants. First instars through pupae noted in dissections in Dunn County and third instars through pupae and empty pupal cases seen in dissections in Rock County. (Wis. Ins. Sur.). MINNESOTA - Infestations low, ranged 6-12 percent, in south-central, southwest, and west-central districts; few fields completely infested in southwest and west-central districts. First instars in west-central district indicate hatch continuing in that area. Mostly fourth and fifth instars with few pupae in south-central and southwest districts. (Minn. Ins. Rpt.). IOWA - First-brood plant infestations averaged 2.2 percent in eastern half and 3.8 percent in western half of northern third of State; larvae per 100 plants averaged 4.5 in eastern half and 3.9 in western half; mostly fourth instars (85 percent) in eastern half, but mainly fifth instars (86 percent) in western half. (Iowa Ins. Sur.). NORTH

DAKOTA - Infested plants ranged up to 32 (average 15) percent in tasseling corn in Richland County; larvae mostly second and third instar. Egg masses only trace. (Brandvik).

FALL ARMYWORM (*Spodoptera exigua*) - NEW YORK - Two females trapped, no larvae on 1,000+ whorls in Hudson Valley. (N.Y. Wkly. Rpt., July 29). MARYLAND - Infested 10-15 percent of 10-acre stand of late corn near Port Republic, Calvert County. (U. Md., Ent. Dept.). ILLINOIS - Found in some late-maturing cornfields. (Ins. Sur. Bull.). TEXAS - Extensively damaged July-planted corn in Hill County; will average one larva per plant. (Hoermann).

WESTERN BLAN CUTWORM (*Lexagrotis albicosta*) - NEBRASKA - No egg masses or larvae detected in 6 cornfields in York, Fillmore, Thayer, Nuckolls, Clay, and Thurston Counties. Undetected in 29 fields in Cuming County. (Hill, Keith). Egg masses averaged 1 per 15 plants in 6 cornfields near North Platte, Lincoln County. Most larvae first and second instar and feeding on tassels. (Staetz). Eggs and/or larvae found on 7 of 10 plants in one field near Grand Island and on 5 of 10 plants near Wood River. (Raun).

GRANULATE CUTWORM (*Feltia subterranea*) - CALIFORNIA - This species and *Sphenophorus vomerinus* (a billbug) medium on 80-acre sorghum planting in Holtville, Imperial County. (Cal. Coop. Rpt.).

SORGHUM WEBWORM (*Celama sorghiella*) - ARKANSAS - Highest infestations 4-5 per 10 row feet in Jackson, Woodruff, and Cross Counties. Survey negative in many fields. (Boyer). TEXAS - Light to heavy in sorghum throughout central blackland counties. Light in Shackelford County field. (Thomas, Boring).

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - ALABAMA - Larvae heavy, destroyed 2 large fields of young grain sorghum in Perry County. (Hairston). MARYLAND - Heavy in sweet corn planting near Salisbury, Wicomico County. (U. Md., Ent. Dept.).

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - MISSISSIPPI - Heavy in 4 Montgomery County cornfields; larvae 2-3 per stalk in most places in fields. (Dinkins). ILLINOIS - Infested 50-57 percent of whorls in very late fields in extreme southern tip of State; first to third instars 1-5+ per whorl. (Ill. Ins. Rpt.).

CORN ROOTWORMS (*Diabrotica* spp.) - NEBRASKA - *D. virgifera* and *D. longicornis* adult emergence nearing completion in Cuming County; few prepupae and pupae remain in soil. Adults ranged 2-35 (average 10) per plant in 14 cornfields; about 75 percent *D. virgifera*, 20 percent *D. longicornis*, and 5 percent *D. undecimpunctata howardi*. Lodging ranged 0-80+ (average 10-15) percent. (Hill, Keith). *D. virgifera* adults averaged 3-4 per plant in 6 Lincoln County fields. (Staetz). MINNESOTA - Many infested fields found during survey in south-central, southwest west-central, and central districts. *D. virgifera* and *D. longicornis* only rarely noted in southwest, south-central, and central districts; absent in west-central district. Larvae in third instar in most fields, but prepupae and pupae higher this week. Extremely wet conditions helped fields recover from rootworm damage. Lodging only in very heavily infested fields. Stunted rather than lodged plants most typical damage this year. (Minn. Ins. Rpt.). ILLINOIS - Increasing in corn; more expected before emergence complete. Pollination complete and silk feeding no longer important in most fields. *D. virgifera* adults heavy, 15-20 per plant, in some fields; silks, leaves, and brace roots damaged. Larval root pruning so severe that some plants died in these fields. *D. virgifera* infestations most severe in fields of second-year corn while *D. longicornis* most severe where corn planted 3 or more years in succession. (Ins. Sur. Bull.).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - MISSOURI - Adults ranged 0-16 per plant on corn in east-central area; averaged 6 per plant in 2 fields. (Munson). WISCONSIN - No adults in Pierce, Dunn, and St. Croix Counties, but lodged corn common. Adults more common in Rock, Lafayette, Grant, and Iowa Counties; ranged from 1 per 5 silks to 3 per silk. Larvae still feeding in roots. Ranged 4-17.5 per plant, mostly prepupa to adult stages, in Rock County July 29. Adults in soil and not yet emerged. Emergence continuing but not as rapid as expected. Silk feeding insignificant, but lodging of stalks common on portions of fields where egg laying concentrated last fall. (Wis. Ins. Sur.). INDIANA - Adults relatively light on corn in central districts as emergence slowed by cool, wet conditions. Ranged from 1 per 5 silks to 2 per silk throughout central third of State. (Huber). OHIO - Adult emergence begun in Madison County (Lyon) and probably elsewhere in central and southern counties (Rose).

WESTERN CORN ROOTWORM (*Diabrotica virgifera*) - COLORADO - Adults 2-15 per plant on silks in Morgan, Weld, Larimer, and Boulder Counties. Larval damage in many fields, but little lodging to date. (Johnson). WYOMING - Ranged 0-16 (average 3.3) per plant in continuous cornfields of Goshen, Laramie, and Platte Counties. Corn beginning to silk. Some controls applied. (Parshall).

CORN FLEA BEETLES (*Chaetocnema* spp.) - ILLINOIS - *C. pulicaria* extremely abundant in cornfields in southern half of State. (Ins. Sur. Bull.). ARIZONA - *C. ectypa* damage continues on young sorghum at Yuma, Yuma County (McHenry); up to 8 per plant in 10-acre field at Safford, Graham County (May, Pearson).

SORGHUM MIDGE (*Contarinia sorghicola*) - TEXAS - Increasing on early grain sorghum in Rolling Plains in Coke, Taylor, Shackelford, Jones, Fisher, and Haskell Counties. (Boring). ARKANSAS - Adults very light in grain sorghum in Jackson, Woodruff, and Cross Counties. Crops in these areas completed blooming (except low places in some fields) and not subject to infestation. No damage found; controls not required. (Boyer).

FALSE CHINCH BUGS (*Nysius* spp.) - OKLAHOMA - *Nysius* sp. very heavy and feeding in grain sorghum heads in Tillman County. (Okla. Coop. Sur.). TEXAS - *N. ericae* heavy on grain sorghum in some areas of Garza, Lynn, Howard, Knox, Tom Green, Andrews, El Paso, and Glasscock Counties. (Boring et al.).

GRASSHOPPERS - MICHIGAN - Moving from grass and alfalfa fields into field corn and pastures in Charlevoix County week ending July 29. (Rebman). Invaded other pastures and field corn in northwestern Lower Peninsula. (Janes, July 30).

RUSTY PLUM APHID (*Hysteroneura setariae*) - ARIZONA - This species and *Aleurocybotus occiduus* (a whitefly) building up in young sorghum at Yuma, Yuma County. (McHenry).

SPIDER MITES - WYOMING - Light to medium on corn up to 4-5 leaves above ground in Goshen and Platte Counties. All leaves with mites in one heavily infested field in Platte County. Controls applied in some fields. (Parshall). COLORADO - *Tetranychus urticae* ranged 0-50 per corn leaf in Larimer, Weld, Boulder, and Morgan Counties. "Burn" noted as high as eighth leaf in some fields. Controls being applied. (Johnson, Rothman). NEBRASKA - *Tetranychus* sp. damage moderate in one of 14 cornfields examined in Cuming County; bottom 4 leaves brown and shriveled. (Hill, Keith). NEVADA - *Oligonychus* sp. and/or *Tetranychus* sp. building up rapidly on silage corn in Fallon, Churchill County. (Arnett).

SMALL GRAINS

HESSIAN FLY (*Mayetiola destructor*) - OHIO - Ripe wheatfields sampled in 31 major wheat-producing counties July 1-29 to estimate current populations and economic significance. Ten-stem samples taken in one field from each county. Maximum puparia 2 per stem, infested plants up to 4 per 10-plant sample. Plants with one puparium averaged 1.80 per sample (18 percent) and plants with 2 puparia averaged 0.258 (2.6 percent). Total (1 and 2 puparia per stem) average infestation in all

fields 2.06 plants per sample (20.6 percent); puparia per sample 2.32. An estimated 1,163,580 bushels of wheat valued at \$2,001,357 lost in 1968. (Tucker).

SAY STINK BUG (Pitedia sayi) - CALIFORNIA - Adults and nymphs of this species and Thyanta pallidovirens medium on oat plantings in Cedarville. Modoc County. (Cal. Coop. Rpt.).

TURF, PASTURES, RANGELAND

FLEA BEETLES (Chaetocnema spp.) - ARIZONA - Damage heavy to many dichondra lawns in Phoenix area. (Foreman, May). Det. by R.E. White. (Ariz. Coop. Sur.).

A BLISTER BEETLE (Linsleya sphaericollis) - OREGON - Severely defoliating snowberry (Symphoricarpos albus) near La Grande, Union County, July 26. (Goeden, Westcott).

TARNISHED PLANT BUG (Lygus lineolaris) - LOUISIANA - Ranged 1-4 (average 2) per 100 sweeps in 10 of 26 grass fields in Madison Parish. (Cleveland et al., Aug. 1).

NOCTUID MOTHS - MICHIGAN - Due to favorable weather Peridroma saucia and Agrotis ipsilon adults heavy at all blacklight stations. Following taken at Montcalm station: A. ipsilon 64. P. saucia 47, Pseudaletia unipuncta 128, Lacinipolia renigera 104. (Janes, July 30).

A GRASSHOPPER (Boottettix argentatus) - TEXAS - Large numbers infested greasewood in 30-mile radius of Ft. Stockton. (Neeb).

A CICADA (Okanagana sp.) - IDAHO - Emergence noted in Leadore area, Lemhi County; emergence most prevalent at 6,500 feet elevation. (Dunham).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - INDIANA - Adults ranged from 1 per 5 sweeps to 6 per sweep on late second-growth alfalfa (full bloom) in east-central district. (Huber). MICHIGAN - Larval numbers reduced by half compared with 10 days ago in alfalfa; mostly last instars or pupae. Feeding damage light to moderate on second growth and should not become serious for rest of growing season. Uncut fields generally in poor condition and showed results of constant feeding from well protected populations. Adults remain high (248 per 200 sweeps) in some fields; 95 percent new emergence from 1968 population. (Janes, July 30).

WISCONSIN - Adults continue to occur in alfalfa indicating true summer dormancy does not exist in State. (Wis. Ins. Sur.). NEBRASKA - Larvae 4 per 600 sweeps in 6 fields in Gothenburg and Cozad area, Dawson County; no adults. Negative in 6 fields near Lexington and Overton area. (Stevens). COLORADO - Adults and larvae ranged 0-20 per 100 sweeps in Larimer, Boulder, Weld, and Morgan Counties. (Johnson). NEW MEXICO - Very heavy prior to first cutting in Espanola Valley, Rio Arriba and Santa Fe Counties. (Heninger). OREGON - One small larva taken in 30 sweeps in field near Goble, Columbia County; leaf damage about 10 percent. Plants 18-20 inches high. Survey negative in 2 fields in Hood River and Wasco Counties. (Brown).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - NEBRASKA - Averaged 3 per 20 sweeps in alfalfa field in Cuming County. (Keith, Hill).

ALFALFA CATERPILLAR (Colias eurytheme) - WYOMING - Larvae averaged 5 per 100 sweeps in alfalfa in Goshen, Platte, and Converse Counties. (Parshall).

COLORADO - Larvae 10-70 per 100 sweeps on alfalfa in Larimer, Boulder, Weld, and Morgan Counties. (Johnson). NEVADA - Adult flight heavy in Fallon, Churchill County. (Arnett). ARIZONA - Adult flights heavy in alfalfa in Safford area, Graham County. (May, Pearson).

GREEN CLOVERWORM (Plathypena scabra) - MISSOURI - Larvae light in alfalfa in southwest area; high counts averaged 60 per 10 sweeps. (Hanning). IOWA - Larvae averaged 5 per 10 sweeps on red clover and alfalfa mixture in south-central area. (Iowa Ins. Sur.). MINNESOTA - Light on alfalfa in State. (Minn. Ins. Rpt.). INDIANA - Early to middle instars ranged from 1 per 5 sweeps to 3 per sweep on third-growth alfalfa in central districts. (Huber).

WEBWORMS (Loxostege spp.) - OKLAHOMA - Heavy in alfalfa in Ottawa County. (Okla. Coop. Sur.). MISSOURI - Larvae, probably L. similalis, scattered and light in southwest area; high counts in alfalfa averaged 20 per 10 sweeps. (Hanning).

LYGUS BUGS (Lygus spp.) - NEBRASKA - Averaged 43 per 20 sweeps in alfalfa field in Cuming County. (Keith, Hill). WYOMING - Adults and nymphs ranged 36-120 (average 64) per 100 sweeps in alfalfa in Converse, Goshen, and Platte Counties. (Parshall). COLORADO - Adults and nymphs 50-100 per 100 sweeps on alfalfa in Larimer, Boulder, Weld, and Morgan Counties. (Johnson). IDAHO - Up to 12 per sweep in untreated alfalfa grown for seed in Midvale, Washington County; averaged less than 3 per sweep in treated fields. (Hackler, Portman). NEVADA - Controls required on seed alfalfa at Clark Station, Nye County. (Adams, Martinelli). ARIZONA - Averaged 450 per 100 sweeps in alfalfa at Safford, Greenlee County. (Pearson).

TARNISHED PLANT BUG (Lygus lineolaris) - MICHIGAN - Increased on alfalfa again this week. (Jones, July 29). INDIANA - Adults 1-3 per sweep on third-growth alfalfa in central districts. (Huber).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - INDIANA - Adults 1-7 per sweep on third-growth alfalfa in central districts. (Huber). NEBRASKA - Light, 25 per 20 sweeps, in Cuming County alfalfa fields. (Keith, Hill).

PEA APHID (Acyrtosiphon pisum) - WYOMING - Adults and nymphs ranged 26-20,000 per 100 sweeps in alfalfa in Goshen, Platte, and Converse Counties; heaviest count in Converse County field. (Parshall). COLORADO - Ranged 250-1,000 per 100 sweeps on alfalfa in Larimer, Boulder, Weld, and Morgan Counties. (Johnson). OKLAHOMA - Moderate in alfalfa in Garvin County. (Okla. Coop. Sur.). MARYLAND - Up to 30-100 per sweep in alfalfa in central area; 0-10 per sweep in most fields. (U. Md., Ent. Dept.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Average per 100 sweeps in alfalfa by county: Greenlee, 525 at Franklin; Pinal, 210 at Casa Grande; Yuma, 300 at Yuma. (Ariz. Coop. Sur.).

FIELD CRICKETS (Gryllus spp.) - NORTH DAKOTA - Nymphs ranged up to 10 (average 5) per square foot in alfalfa field in Richland County. (Brandvik).

ALFALFA SEED CHALCID (Bruchophagus rodii) - NEVADA - Damage continues to increase in alfalfa seed fields in Dixie Valley, Pershing County. (Adams, Martinelli). OKLAHOMA - Second-generation adults near peak emergence in plots in Perkins area, Payne County. (Okla. Coop. Sur.).

SPIDER MITES (Tetranychus spp.) - ARIZONA - Discolored alfalfa leaves at Parker, Yuma County. (McHenry).

SOYBEANS

GREEN CLOVERWORM (Plathypena scabra) - MICHIGAN - Blacklight catches increased in following counties: Lenawee 28, Berrien 19, Monroe 37, Montcalm 21, and Newaygo 34. Increase normal for July. Larvae light in southwest area fields; no controls expected. (Jones, July 29). ILLINOIS - Continues to increase in northern half of State. Average per yard of row by district: West 4.2, west-southwest 2, and northwest 3. (Ill. Ins. Rpt.). MINNESOTA - Light on soybeans in State. (Minn. Ins. Rpt.). SOUTH CAROLINA - Increasing in soybeans in Darlington County. (Thomas, July 31).

LESSER CORNSTALK BORER (Elastopalpus lignosellus) - ALABAMA - More of a problem than usual on Conecuh County soybeans and cowpeas. Medium to heavy in most fields. (Lemons). SOUTH CAROLINA - Damage noted in scattered fields in Hampton, Newberry, and Edgefield Counties. (Thomas, July 31).

GARDEN WEBWORM (Lonostege similalis) - MISSOURI - Larvae averaged 2 per row foot in soybeans in southwestern area. (Munson).

MEXICAN BEAN BEETLE (Epilachna varivestis) - SOUTH CAROLINA - Damaged soybeans on several farms in northern Spartanburg County; control necessary. (Nettles, July 31). Increasing in many Coastal Plain counties; numerous eggs and new larvae in many fields. (Thomas, July 31).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MISSISSIPPI - Heavy in northwest area; adults 3 or more on about half of plants. Leaf damage not critical. (Dinkins).

TARNISHED PLANT BUG (Lygus lineolaris) - LOUISIANA - Ranged 1-4 (average 2.2) per 100 sweeps in 12 of 24 fields in Madison Parish. (Cleveland et al., Aug. 1).

GRASSHOPPERS - MISSOURI - Damage noted in northwestern area; nymphs half to nearly full grown. Occasional adult in area. (Munson).

PEANUTS

RED-NECKED PEANUTWORM (Stegasta bosqueella) - OKLAHOMA - Very heavy, damaged almost all terminals in fields in southwest area and in Payne County. Averaged 2 per plant in Tillman County. (Okla. Coop. Sur.). GEORGIA - Light to moderate across peanut belt. (French).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - GEORGIA - Light to heavy across peanut belt. (French).

GRANULATE CUTWORM (Feltia subterranea) - GEORGIA - Light to heavy across peanut belt. (French).

COTTON

BOLL WEEVIL (Anthonomus grandis) - SOUTH CAROLINA - First generation increasing, but overwintered adults still emerging at Florence. Larvae infested 0-11.1 percent of treated plots and 10.5-29.0 percent of untreated plots. Adults per 100 squares 0-3.4 in treated plots and 0-2.0 in untreated plots. Three overwintered adults in 6 male traps; 2,843 to date. First generation on trap plants 22; 29 to date. (Taft et al.). GEORGIA - Light to heavy, migration beginning in southern area (Womack); very heavy in Baldwin County (Sirmans). TENNESSEE - First-generation "hatchout" over in most cases in regularly infested portion of west area. Egg laying heavy in west area. Square counts in treated and untreated fields averaged 26 percent this week compared with 14 percent last week. Square counts very high due to ineffective control. Infested 90+ percent of squares where early season controls not used. Rains over area making conditions ideal for further increase; infestations directly proportional to amount of rainfall in past month. (Locke). ALABAMA - Infestations continue high, but largely under control in most southern and central areas. Drought conditions in southern area caused much square shedding that resulted in less fruit for weevils to feed and lay eggs on. Some small to medium size bolls damaged. Steady increase in percent square infestations in northern fields following recent adult emergence. Some controls being applied in fields where infestations exceed 10-15 percent. (McQueen). LOUISIANA - Caught 9 in caged traps, 4 in winged traps, and 1 from 100 cotton plants used in sex attractant test at Madison Parish week ending July 25. Total to date 2,527. Infested 1-31 (average 10.1) percent of squares in 117 of 118 fields; no infestation in 1 field. Total

of 6 weevils recovered from cage traps, 3 from 10 winged traps (5 males in each), and 8 from 5 winged traps (5 females in each) in Madison Parish week ending August 1. Percent punctured squares ranged 1-44 (average 9.6) in 160 of 161 experimental plots examined and 2-40 (average 9.6) in 20 fields surveyed. (Cleveland et al.). MISSISSIPPI - Infestations increased in south-central delta region; many newly emerged weevils in Yazoo County. Average percent punctured squares by county: Hinds, 5 in 6 fields; Montgomery, 6 in 42; Quitman, 6 in 50; Clay, 10 in 4; Yazoo, 8 in 30 fields. (Dinkins). Percent punctured squares ranged 3.5-29 (average 11) in 4 of 12 fields checked in delta counties. (Pfrimmer et al.). ARKANSAS - Infested 3,328 (51.3 percent) of fields surveyed; above treatment level in 261 fields. Total of 300 fields treated this period. (Boyer, Barnes). OKLAHOMA - Infestations averaged 7 percent or less in most fields in Greer, Stephens, Jackson, Kiowa, Tillman, and Cotton Counties; damage 20-80 percent in few fields. Heavy in older cotton in Marshall County, moderate in Cleveland County, and light in other west-central and south-central counties. (Okla. Coop. Sur.). TEXAS - Infestation remained about same as previous period in McLennan and Falls Counties. Damaging infestations found in 6 of 20 treated fields and in 9 of 13 untreated fields. Percent punctured squares ranged 2.7-33.8 (average 10.7) in treated fields and 5.5-51.2 (average 16.9) in untreated fields. (Cowan et al.). For Boll Weevil in High Plains see page 773.

BOLLWORMS (*Heliothis* spp.) - SOUTH CAROLINA - Very heavy in light traps at Florence; cotton protection essential. Percent larval infestations ranged 0-3.3 in treated plots and 0-0.5 in untreated plots. Totals in light trap: 509 *H. zea*, 13 *H. virescens*; to date, 941 *H. zea*, 19 *H. virescens*. (Taft et al.). GEORGIA - Very heavy throughout State. (Womack). TENNESSEE - Continues damaging over western area; infestations light to heavy. Eggs or larvae 1-14 per 100 terminals. Much large boll damage throughout area. All stages in about 90 percent of fields surveyed. (Locke). ALABAMA - Generally not serious except in isolated fields where controls killed beneficial insects. Flights of *H. zea* and *H. virescens* occurring; egg laying statewide. Will continue threat, especially in younger cotton and lush irrigated fields or low, damp areas of nonirrigated fields. (McQueen). MISSISSIPPI - Infestations increased sharply in Yazoo County. Mostly first to third instars still in terminals. Larvae 3-20 per 100 terminals. Very few eggs in terminals; eggs probably further down in plant. (Dinkins). Percent *H. zea* damaged squares 0.5-5.5 (average 2.2) in 8 of 12 fields checked in delta counties. Very few eggs and larvae in fields; moths very low in light traps. (Pfrimmer et al.). LOUISIANA - Percent *H. zea* damaged squares ranged 1-7 (average 1.97) in 101 of 118 fields in Madison Parish week ending July 25. Eggs averaged 5.4 in 101 fields and larvae averaged 1.6 per 100 terminals in 30 fields of 118 fields checked; no larvae in 88 fields. Blacklight traps caught 64 *H. zea* and 7 *H. virescens*. Percent *H. zea* damaged squares ranged 1-11 (average 3.5) in 157 of 161 experimental plots inspected and 1-6 (average 2.7) in 17 of 20 fields surveyed in Madison Parish week ending August 1. Larvae ranged 1-12 (average 2.8) per 100 terminals in 121 of 161 experimental plots examined. Damaged bolls ranged 1-2 percent in 10 of 77 experimental plots examined. (Cleveland et al.). ARKANSAS - *H. zea* eggs, larvae, and/or both found in 2,805 (43.2 percent) of fields surveyed. Percent damaged squares averaged less than 1 in 824 fields, 1-2 in 1,673 fields, 2-5 in 993 fields, 5-8 in 232 fields, and 8+ in 63 fields; no damaged squares found in 2,704 fields. Most fields with 8+ percent damaged squares in central area. Total of 10 moths present on sugar lines July 24-30. Total of 258 fields treated this period; 129 additional fields treated for *Anthonomus grandis* and *H. zea*. (Boyer et al.). MISSOURI - Larvae ranged 1-5 per 100 plants in 91 of 353 scouted fields. (Jones). TEXAS - Infestation remained about same as previous week in McLennan and Falls Counties. Eggs ranged 0-22.5 (average 7.3) and larvae 0.7-23 (average 8.2) per 100 terminals in 20 treated fields; eggs 0-9.8 (average 2.3) and larvae 0-20.5 (average 3.7) per 100 terminals in 13 untreated fields. Percent damaged squares ranged 2.3-17.5 (average 10.4) in treated fields and 0.8-42.0 (average 9.7) in untreated fields. Percent damaged bolls ranged 2.3-17.0 (average 10.7) in treated fields and 0.2-49.5 (average 11) in untreated fields. Of 1,032 larvae previously collected on cotton, 149 determined *H. virescens*. (Cowan et al.). *H. zea* light in Floyd, Martin, and Mitchell Counties; medium in Dawson and Yoakum Counties. (Almand, July 30).

OKLAHOMA - H. zea larvae generally ranged 3-8 per 100 terminals in west-central, southwest, and south-central counties; egg counts light. (Okla. Coop. Sur.). NEW MEXICO - H. zea light to heavy and damaging young squares and bolls in Chaves County; controls required in occasional fields. (N.M. Coop. Rpt.). ARIZONA - H. zea increase begun in many fields in Yuma County. (McHenry). Light in Franklin area, Greenlee County, and Sahuarita area, Pima County; light and scattered in Maricopa County. (Ariz. Coop. Sur.).

COTTON SQUARE BORER (Styrmex melinus) - OKLAHOMA - Damage averaged 1 percent in Grac. Jackson, Kiowa, and Tillman Counties; moderate in Washita County. (Okla. Coop. Sur.).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Increasing despite controls at Yuma, Yuma County. (McHenry).

PLANT BUGS - ARKANSAS - Counts per 100 terminals ranged 1-19 (light) in 5,052 fields, 20-39 (medium) in 74 fields, and 40+ (heavy) in 15 fields. None found in 1,348 fields. Total of 28 fields treated this period. (Boyer, Barnes).

TENNESSEE - Some heavy Lygus lineolaris damage continues in isolated fields over western area. (Locke). LOUISIANA - L. lineolaris ranged 1-7 (average 2.1) per 100 sweeps in 17 of 28 fields surveyed in Madison Parish. (Cleveland et al., Aug. 1). ARIZONA - Lygus spp. averaged 50 per 100 sweeps at Franklin, Greenlee County. (Pearson).

APHIDS - TENNESSEE - Heavy in some western area fields; terminals most affected. (Locke). TEXAS - Light in Dawson, Cochran, and Yoakum Counties. (Almand, July 30). MISSOURI - Aphis gossypii very light in 28 of 353 fields checked. (Jones). NEW MEXICO - A. gossypii very light and scattered in Chaves County. (Mathews). ARIZONA - A. gossypii light and scattered on blooms and young tip growth at Safford, Graham County. (May).

THRIPS - TEXAS - Light in Floyd, Dawson, Martin, Yoakum, and Lamb Counties. (Almand, July 30). ARIZONA - Frankliniella occidentalis adults averaged 20 per bloom at Casa Grande, Pinal County. (Fitsimmons, Mills).

SPIDER MITES - TENNESSEE - Severe injury to many fields over western area. Worst year ever; further increase expected. Completely destroyed some fields. (Locke). ALABAMA - Mainly Tetranychus telarius continues serious in many central and northern area fields; damage worst since 1962. (McQueen). MISSISSIPPI - T. urticae light and spotted in Montgomery County. (Dinkins). Spotted infestations in delta counties; light in 3 fields, medium in 1, and heavy in 3 of 12 fields checked. (Pfirmer et al.). ARIZONA - Tetranychus spp. causing leaf discoloration in Parker Valley area, Yuma County. (McHenry).

TOBACCO

GREEN PEACH APHID (Myzus persicae) - MARYLAND - Remains light to medium; rapid buildup expected if weather becomes cooler. (U. Md., Ent. Dept.).

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - MARYLAND - Infestations ranged 12-22 percent in tobacco surveyed; only light damage noted. (U. Md., Ent. Dept.).

SUGARBEETS

SPOTTED BLISTER BEETLE (Epicauta maculata) - WYOMING - Heavy in fields near Lingle, Goshen County; about 500 acres sprayed. (Bouten).

LYGUS BUGS (Lygus spp.) - WYOMING - Adults averaged 6 per 100 sweeps in Goshen and Platte Counties. (Parshall).

BEET WEBWORM (Loxostege sticticalis) - WYOMING - Larvae averaged 2 per 100 sweeps in Goshen and Laramie Counties. (Parshall).

MISCELLANEOUS FIELD CROPS

SUNFLOWER MOTH (Homoeosoma electellum) - NORTH DAKOTA - Larvae up to 15 per plant on volunteer sunflower near Hunter, Cass County. (Scholl et al.).

POTATOES, TOMATOES, PEPPERS

EUROPEAN CORN BORER (Ostrinia nubilalis) - MICHIGAN - Initial emergences of second brood started in Lenawee County; first male in blacklight trap July 19. This station indicator of approaching larval problems, particularly on peppers. Most of second brood will emerge next 14 days; peak larval problems expected about mid-August. (Janes). PENNSYLVANIA - Pupation about 90 percent on Snyder County potatoes. Development rapid July 18-24. Moderate second-generation flight expected about August 1. (Gesell).

CABBAGE LOOPER (Trichoplusia ni) - VIRGINIA - Moths increased sharply in light trap at Painter on Eastern Shore. Many observed in tomatoes; treatment indicated. (Hofmaster).

Potato Aphids in Maine - Aphis nasturtii, Myzus persicae, Acyrtosiphon solani, and Macrosiphum euphorbiae continue very light on untreated potatoes in Presque Isle district; little increase past period. Few M. euphorbiae killed by entomogenous fungi; further slowing of rate of increase indicated, especially for M. euphorbiae. Substantially higher on untreated potatoes in Houlton and Lee districts than at Presque Isle, especially in early planted fields. Rate of increase less than week earlier in Houlton and Lee districts; only few fields where numbers double those of preceding week. (Shands et al.).

GREEN PEACH APHID (Myzus persicae) - NEW YORK - Building up rapidly on tomatoes and peppers in Monroe County. (N.Y. Wkly. Rpt., July 29). PENNSYLVANIA - Heaviest population on potatoes in 10 years in southern tier of counties. Controls underway since early July. (Tetrault, July 25). DELAWARE - Increase continues on sweet peppers, even in fields sprayed 3-4 times. (Burbutis). MARYLAND - Medium to heavy on peppers on Eastern Shore; heavy on late potatoes in same area. (U. Md., Ent. Dept.).

MELON APHID (Aphis gossypii) - FLORIDA - Infested redpepper (Capsicum frutescens) and mandevilla (Dipladenia splendens) in Ft. Pierce July 22 for new host records. (Campbell).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - RHODE ISLAND - Adults, first and second instars, and eggs evident in State. (Kerr). MINNESOTA - Only few in potato fields in Stephen area, Marshall County. Populations decreasing in heavily infested field near Stephen. (Minn. Ins. Rpt.). COLORADO - Adults and larvae 0-3 per potato plant in Weld and Morgan Counties. (Johnson).

MARGINED BLISTER BEETLE (Epicauta pestifera) - GEORGIA - Light to moderate on eggplants in State. (Shackleford).

PEPPER MAGGOT (Zonosemata electa) - NEW JERSEY - Adults trapped July 25-31 by area: Vineland, 11 on 8 stickyboards; Cedarville, 133 on 4 stickyboards; Salem, none on 1 stickyboard. (Ins.-Dis. Newsltr.).

SPIDER MITES (Tetranychus spp.) - OKLAHOMA - Ranged 30-40 per leaf on tomatoes in Payne County; moderate to heavy in Canadian and Cleveland Counties. (Okla. Coop. Sur.). NEW JERSEY - T. urticae increasing in most eggplant fields in southern counties; evident in several tomato plantings in Cumberland County. (Ins.-Dis. Newsltr.). CALIFORNIA - T. urticae heavy on bell pepper plantings in Encanto, San Diego County. (Cal. Coop. Rpt.).

BEANS AND PEAS

MEXICAN BEAN BEETLE (Epilachna varivestis) - NEW HAMPSHIRE - Pupating on lower surface of leaves July 23 at Hudson, Hillsborough County. (Sutherland). NEW YORK - Larvae scarce in Monroe County. (N.Y. Wkly. Rpt., July 29). MICHIGAN - Pupating; adults expected within week. (Wells, July 29). COLORADO - Larvae 0-15 per bean plant, feeding damage light to moderate in most areas in Morgan, Weld, Larimer, and Boulder Counties. (Johnson). WYOMING - Adults, pupae, and larvae ranged 0-51 (average 26) per 10 plants in bean fields in Platte and Goshen Counties; eggs still in few fields. Controls being applied. (Parshall).

COWPEA CURCULIO (Chalcodermus aeneus) - GEORGIA - Heavy in pole beans in Spalding County. (Dupree).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - IDAHO - Fourth and fifth instars averaged about 1 per square yard in lentil field in Cavendish area, Clearwater County. Very few lentil pods on ground, but some damage indicated. (Fitzsimmons).

GREEN CLOVERWORM (Plathypena scabra) - DELAWARE - Larvae continue to increase on lima beans in Sussex County; ranged 3-7 per row foot. (Burbutis).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ALABAMA - Larvae destroyed stand of field peas in 4-acre planting at Bellville, Conecuh County. (Lemons). GEORGIA - Heavy on beans in Coweta County. (Hamilton).

TARNISHED PLANT BUG (Lygus lineolaris) - DELAWARE - Continues buildup on lima and snap beans in commercial plantings. (Boys, Aug. 1). Nymphs and adults very numerous on lima beans in most areas. (Burbutis).

A FALSE CHINCH BUG (Nysius raphanus) - ALABAMA - Very heavy June 22-July 5 on peas and beans throughout southeast area and as far north as Bibb County; seriously damaged field peas in Escambia County; controls difficult. Det. by J.L. Herring. (Chapman et al.).

COLE CROPS

CABBAGE LOOPER (Trichoplusia ni) - MICHIGAN - Collected July 24 in blacklight trap in Montcalm County; also collected in Newaygo, Monroe, Lenawee, and Berrien Counties. Active, more numerous this week than last. Control programs should be well underway. (Janes). VIRGINIA - Moths increased sharply in light trap at Painter on Eastern Shore. (Hofmaster). VERMONT - Common in crucifer plantings in State. (MacCollom). NEW HAMPSHIRE - Larvae more common on crucifers and lettuce than at this time in last 3 years at Stratham, Rockingham County, and at Litchfield and Hudson in Hillsborough County. Feeding injury 40 percent in one cabbage field. (Sutherland, July 29).

IMPORTED CABBAGEWORM (Pieris rapae) - NEW YORK - Larvae more prevalent in Monroe County crucifer plantings. (N.Y. Wkly. Rpt., July 29). VERMONT - Common in crucifer plantings in State. (MacCollom).

DIAMONDBACK MOTH (Plutella xylostella) - NEW YORK - Larvae more prevalent in Monroe County crucifer plantings. (N.Y. Wkly. Rpt., July 29).

CABBAGE MAGGOT (Hylemya brassicae) - NEW YORK - Heavy in early direct field seeded cabbage planting in Monroe County; no controls used. Plants at stage of head formation; larvae about two-thirds developed. (N.Y. Wkly. Rpt., July 29).

CUCURBITS

MELON APHID (Aphis gossypii) - MARYLAND - Continues heavy on watermelons, cucumbers, and cantaloups on Eastern Shore; controls being applied. (U. Md., Ent. Dept.).
DELAWARE - Continues to damage melons in Sussex and Kent Counties. (Boys, Aug. 1).

SQUASH VINE BORER (Melittia cucurbitae) - WISCONSIN - First adult of season in Dane County. (Wis. Ins. Sur.).

INSECT DETECTION

New State Records

A POWDER-POST BEETLE (Minthea rugicollis (Walker)) - FLORIDA - In oak flooring at Coral Gables, Dade County. Collected by A.L. Humphries and J.L. Weaver May 6, 1968. Det. by R.E. Woodruff. Confirmed by E.J. Gerberg. First established infestation in the continental United States. (p. 772).

A GRASSHOPPER (Oedaleus abruptus (Thunberg)) - HAWAII - On dry grass at Hickam Air Force Base, Honolulu, Oahu. Collected by F. Olson, E. Shiroma, and G. Funasaki July 12, 1968. Det. by A.B. Gurney. This is also a new Western Hemisphere record. (p. 776).

New County Records

ASIATIC GARDEN BEETLE (Maladera castanea) - PENNSYLVANIA - Northumberland County. (p. 766).

PECAN NUT CASEBEARER (Acrobasis caryae) - TEXAS - Ward County. (p. 767).

AN ERIOPHYID MITE (Phyllocoptes wisconsinensis) - PENNSYLVANIA - Crawford County. (p. 768).

HOLLYHOCK WEEVIL (Apion longirostre) - NEVADA - Ormsby County. (p. 768).

AN APHID (Pentalonia nigronervosa) - CALIFORNIA - Calaveras County. (p. 768).

AN ARMORED SCALE (Aonidomytilus solidaginis) - FLORIDA - Hillsborough County. (p. 768).

MIMOSA WEBWORM (Homadaula anisocentra) - IOWA - Madison County. (p. 769).

SOYBEAN CYST NEMATODE (Heterodera glycines) - MISSISSIPPI - Claiborne County. (p. 775).

GENERAL VEGETABLES

ASIATIC GARDEN BEETLE (*Melolontha castanea*) - PENNSYLVANIA - Many collected in light trap in Philadelphia County. (Bachtie, July 16). Abundant in vegetable fields at Montandon, Northumberland County, for new county record. (Gesell, July 24).

SOUTHERN POTATO WIREWORM (*Conoderus falli*) - SOUTH CAROLINA - Numbers in light traps at Charleston caught each week in July: 560; 1,387; 3,823; and 796. (Cuthbert).

ONION THRIPS (*Thrips tabaci*) - COLORADO - Ranged 0-15 per onion plant in Weld, Boulder, Larimer, and Morgan Counties. (Johnson).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (*Carpocapsa pomonella*) - MISSOURI - On unsprayed apples: Severe in central area, moderate in delta area, moderate to light in south-southcentral area, light in west-central area; light on sprayed apples in northeast area. (Wkly. Rpt. Fr. Grs., July 30). INDIANA - Adult activity continues low; 33 males in 30 virgin female traps at Vincennes, Knox County. (Dolphin, July 29). NEW JERSEY - Trapped 6 moths in baited jar in Gloucester County July 25-31. (Ins.-Dis. Newsltr.).

ORIENTAL FRUIT MOTH (*Grapholitha molesta*) - MISSOURI - Severe to moderate on unsprayed south-southcentral peaches; light on sprayed peaches in west-central and delta areas. (Wkly. Rpt. Fr. Grs., July 30). INDIANA - Third flight declining but adults still common in peach orchards at Vincennes, Knox County. (Dolphin, July 29). NEW JERSEY - Trapped 4 moths in baited jar in Gloucester County July 25-31. (Ins.-Dis. Newsltr.).

FALL WEBWORM (*Hyphantria cunea*) - OHIO - Larvae and webbing scattered primarily on cherry, walnut, and apple in Tuscarawas, Harrison, Jefferson, Belmont, Guernsey, and Wayne Counties. Defoliation insignificant as of July 30; most larvae small (0.25-0.5 inch long). Numbers and defoliation expected to increase soon statewide. (Rose).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - INDIANA - Third adult flight intensified with 525 males in 30 virgin female traps at Vincennes orchard. (Dolphin, July 29).

ALGERIID MOTHS - ALABAMA - *Sanninoidea exitiosa* and *Synanthedon pictipes* moth emergence heavy in peach orchards and from other affected trees past 2-3 weeks; egg laying now heavy. Badly damaged many small home orchard trees due to control lapse since harvest. (Leeper et al.). INDIANA - *S. pictipes* male captures low (136) in virgin female traps at Vincennes orchard. (Dolphin, July 29).

APPLE MAGGOT (*Rhagoletis pomonella*) - WISCONSIN - Increased in Door County. Highest numbers caught in survey July 24-30 in Dane County at Madison on crab apple (144) and at Oregon (127). (Wis. Ins. Sur.). INDIANA - Adults on stickyboards decreased from 341 to 123 at Vincennes. Prepupae continue to leave dropped apples prior to subterranean pupation. (Dolphin, July 29). OHIO - Larval emergence began July 27 from summer pippin apples collected in Lake County. (Still). NEW JERSEY - Adults trapped July 25-31 by county: Gloucester, 15 on 4 stickyboards; Burlington, 69 on 2 stickyboards; Mercer, 31 on 2 stickyboards. (Ins.-Dis. Newsltr.). CONNECTICUT - Adults emerged steadily (averaged about 50-55 per day) through July 28 and dropped drastically (3) July 29 at Storrs. Similar drops experienced at New Haven and Woodstock. Male-female ratio at Storrs continued about 1:1 indicating maggots can still be very troublesome. Peak emergence past but will probably continue to emerge at low rate for some time. (Savos). NEW YORK - Emergence peaked around July 24 in Monroe County. Apples showed numerous egg laying punctures in Clinton and Essex Counties; cut fruit showed larval penetration. (N.Y. Wkly. Rpt.). VERMONT - Still increasing on late-variety apples,

but emergence past peak on early varieties. (MacCollom).

TEPHRITID FLIES (Rhagoletis spp.) - MICHIGAN - Infested cherries on 4 properties in Benzie, Manistee, Leelanau, and Oceana Counties. (Hanna, July 29). WISCONSIN - Few R. cingulata adults appearing. R. fausta adults began decreasing. (Wis. Ins. Sur.). OREGON - Total of 7 R. cingulata indifferens taken July 19-26 in husk fly trap at Corvallis, Benton County. (Westcott).

PEAR PSYLLA (Psylla pyricola) - PENNSYLVANIA - Moderately severe on unsprayed pear trees statewide. Most unsprayed trees will approach complete defoliation by mid-August. (Gesell, July 25).

APPLE APHID (Aphis pomi) - RHODE ISLAND - Heavy on scattered leaves of apple and pear in State. (Field). CONNECTICUT - Very low or none in all reporting apple orchards. (Savos, July 31). NEW HAMPSHIRE - Numbers remain high. (Sutherland, July 29).

WOOLLY APPLE APHID (Eriosoma lanigerum) - RHODE ISLAND - Light on Washington County pears July 26. (Field). DELAWARE - Spotty on apple plantings at Bridgeville, Sussex County. (Boys, Aug. 1). CALIFORNIA - Locally heavy on apple trees in Grass Valley, Nevada County; more prevalent in 1968. (Cal. Coop. Rpt.).

EUROPEAN RED MITE (Panonychus ulmi) - MISSOURI - Severe to moderate on unsprayed south-southcentral area apples; on sprayed apples: Moderate in northeast, moderate to light in delta area, and light in central and west-central areas. (Wkly. Rpt. Fr. Grs., July 30). INDIANA - Weather favored rapid increase on apple; repeated controls necessary at Vincennes, Knox County. (Dolphin, July 29). PENNSYLVANIA - No problem in well-sprayed apple orchards; bronzed foliage in poorly sprayed orchards. Ranged from none to 250 mites per leaf in south-central and eastern counties. (Tetrault, July 25). NEW YORK - Discolored some apple orchards with continued high temperatures in Ulster County. Built up to high levels in some apple blocks last few weeks, browned much foliage in Monroe County. (N.Y. Wkly. Rpt., July 29). RHODE ISLAND - All stages 3-10 per leaf on some leaves of Washington County apples. (Field.). NEW HAMPSHIRE - Increasing; some bronzed leaves appearing. (Sutherland, July 29).

SPIDER MITES (Tetranychus spp.) - DELAWARE - Tetranychus sp. egg hatching on apple at Dover, Kent County. (Boys, Aug. 1). NEW YORK - Tetranychus sp. discolored some apple orchards in Ulster County with continued high temperatures. (N.Y. Wkly. Rpt., July 29). INDIANA - Weather favored rapid increase of Tetranychus sp. on apple; repeated controls necessary at Vincennes, Knox County. (Dolphin, July 29). WISCONSIN - Probably Tetranychus spp. may be showing increased resistance; control efforts not successful in commercial orchards in Gays Mills, Crawford County; and in Trempealeau, Trempealeau County, to La Crosse, La Crosse County. (Wis. Ins. Sur.). IDAHO - T. mcDanieli ranged up to 200 per leaf in parts of some integrated orchard blocks of Canyon County. Typhlodromus spp. (phytoseiid mites) 0-5 per leaf. Controls applied. (Homan).

ERIOPHYID MITES - NEW YORK - Aculus schlechtendali in 2 to 5-year-old orchards in Clinton and Essex Counties. (N.Y. Wkly. Rpt., July 29). GEORGIA - A. cornutus averaged 50+ per square inch of leaf surface on peaches in Sumter County; 5 per square inch in Spalding County. (Tippins). OKLAHOMA - Aceria caryae found on 80 percent of leaves on infested pecan branches at Stillwater, Payne County. (Okla. Coop. Sur.).

PECAN NUT CASEBEARER (Acrobasis caryae) - TEXAS - Detected at Monahans, Ward County, for a new county record. (Neeb).

WALNUT CATERPILLAR (Datana integerrima) - OHIO - Early instars feeding on black walnut in Delaware County July 27; defoliation light. (Hanson). Egg hatch as early as June and early July indicates much variation in larval growth and consequent defoliation of walnut and hickory. (Rose). MICHIGAN - First and second instars at Lansing. (Wallner, July 29).

BLACK-MARGINED APHID (*Memellia costalis*) - OKLAHOMA - Up to several hundred per leaf on pecan trees checked in Noble, Payne, Lincoln, and Tulsa Counties. (Okla. Coop. Sur.).

OBSURE SCALE (*Melanaspis obscura*) - FLORIDA - Found on pecan at Monticello, Jefferson County. (Whitcomb). This is a new Florida Department of Plant Industry host record. (Fla. Coop. Sur.).

CITRUS

CALIFORNIA RED SCALE (*Aonidiella aurantii*) - CALIFORNIA - Heavy in citrus grove at Porterville, Tulare County. (Cal. Coop. Rpt.).

SMALL FRUITS

AN ERIOPHYID MITE (*Phyllocoptes wisconsinensis*) - PENNSYLVANIA - Leaf distortion very noticeable in planting of cultivated elderberries in Crawford County. This is a new county record. (Adams, July 19).

ORNAMENTALS

HOLLYHOCK WEEVIL (*Apion longirostre*) - NEVADA - Light on hollyhock at Carson City, Ormsby County, for a new county record. (Bechtel, Horton). Surveys negative at Tonopah, Nye County, and at Lovelock, Pershing County. (Martinelli).

ASIATIC GARDEN BEETLE (*Maladera castanea*) - DELAWARE - Adults and nymphs injured many varieties of shrubs and flower plantings statewide. (Boys, Aug. 1).

BAGWORM (*Thyridopteryx ephemeraeformis*) - MARYLAND - Very heavy damage in many localized areas statewide; complete defoliation of shrubs and trees in many cases. (U. Md., Ent. Dept.). ARKANSAS - Increasing on shrubs at Fayetteville; scattered infestations heavy in many areas of State. (Boyer).

AN APHID (*Pentalonia nigronervosa*) - CALIFORNIA - Infesting cyclamen at San Andreas, Calaveras County. Collected by W. Andahl July 23, 1968. Det. by T. Kono. This is a new county and a new host record; also a vector of bunchy-top virus. (Cal. Coop. Rpt.).

AN ARMORED SCALE (*Aonidomytilus solidaginis*) - FLORIDA - Infested *Eupatorium* sp. June 20 at Tampa, Hillsborough County, for a new county record. (Baker, Daniel).

A PIT SCALE (*Cerococcus deklei*) - FLORIDA - Taken on geranium at Miami June 29 for a new host record in State. (Dillon).

FOREST AND SHADE TREES

SPRUCE BUDWORM (*Choristoneura fumiferana*) - MINNESOTA - Populations increased again in 1968, especially in Orr and Cook vicinities in St. Louis County; severely defoliated many balsam fir stands. Control may be necessary in 1969. (Minn. Ins. Rpt.).

JACK-PINE BUDWORM (*Choristoneura pinus*) - MINNESOTA - Aerial survey in northern Pine and Carlton Counties showed defoliation spotty and ranging very light to medium. Some pockets of heavy defoliation. (Minn. Ins. Rpt.). WISCONSIN - Damage severe in many sections of Vilas County. (Wis. Ins. Sur.).

NANTUCKET PINE TIP MOTH (*Rhyacionia frustrana*) - MARYLAND - Heavy on 4-acre Scotch pine planting near Hurlock, Dorchester County; infested 100 percent of tips. (U. Md., Ent. Dept.).

WHITE-PINE WEEVIL (*Pissodes strobi*) - WISCONSIN - Damage common on Vilas County white pine. (Wis. Ins. Sur.). RHODE ISLAND - Heavy numbers indicated by damage throughout State. (Field). VERMONT - Pupating in leaders; emergence expected soon. (MacCollom). NEW HAMPSHIRE - More prevalent than in 1967, particularly on ornamental pines and spruce. (Conklin, July 29).

PALES WEEVIL (*Hylobius pales*) - VIRGINIA - Damage moderate in many woodland plantations through Portsmouth district. Damaging scattered loblolly pine seedlings at location in Halifax County. Damage obvious on white pine plantation in Craig County. (For. Pest Sur. Rpt., June Sum.).

NORTHERN PINE WEEVIL (*Pissodes approximatus*) - VIRGINIA - Damage moderate for first time on 1968 loblolly pine seed orchard grafts. Weevils emerged in laboratory at Charlottesville June 20. (For. Pest Sur. Rpt.).

RED-HEADED PINE SAWFLY (*Neodiprion lecontei*) - VIRGINIA - Large larvae medium on deodar cedar in Appomattox County. (Smith, Amos). MINNESOTA - In first and second instars in northern Pine and Carlton Counties. Heavy damage of previous years not showing up this year. Tentatively planned control programs may not be necessary in some areas. (Minn. Ins. Rpt.).

LARCH SAWFLY (*Pristiphora erichsonii*) - MINNESOTA - Feeding about complete; small numbers of late instars active. Feeding appears more widespread than in 1967. Defoliation ranged from light to 80 percent. (Minn. Ins. Rpt.).

FOREST TENT CATERPILLAR (*Malacosoma disstria*) - MINNESOTA - Aerial survey conducted in most of Koochiching County and in areas of St. Louis County to Mesabi Range cities of Eveleth, Hibbing, Virginia, Aurora, and Hoyt Lakes. Defoliation heavy to forest stands of various sizes with adjacent spots of feeding moderate to light. More intense spread was predicted for 1968 (CEIR 18(4):38), but cool, moist weather throughout egg hatch and larval periods apparently reduced populations. Total heavily defoliated area less in 1968 than in 1967. Substantial reduction recorded in Superior National Forest. Population movement in west and southwest direction from International Falls. Larval populations light all the way to Waskish, Baudette, and Northome. Parasitism counts in progress. (Minn. Ins. Rpt.). VIRGINIA - No apparent defoliation detected during aerial survey in northern Warren and southern Clarke Counties in June; no defoliation in surrounding areas during another survey. (For. Pest Sur. Rpt.).

MIMOSA WEBWORM (*Homadula anisocentra*) - TENNESSEE - Very heavy over most of west area. (Locke). IOWA - Larvae collected in Madison County for a new county record. (Iowa Ins. Sur.). INDIANA - Damage on roadside honeylocust in northern and central areas more evident than for several years. Most infestations light; browned less than 15 percent of foliage. (Huber). OHIO - Damage severe on numerous honeylocust trees; first-generation larvae destroyed up to 80-90 percent of foliage along Ohio River in Belmont and Jefferson Counties. Full-grown larvae and pupae in webbed leaves. Destroyed up to 20 percent of foliage on individual trees in Franklin County. (Rose). MARYLAND - Heavy on mimosa and honeylocust statewide. (U. Md., Ent. Dept.).

FALL CANKERWORM (*Alsophila pometaria*) - VIRGINIA - Infestation evident in mid-June along southeastern side of Bull Run Mountain, Prince William County. Defoliation 5-70 percent on 400 acres during ground survey July 8. Infestations decreased again in 1968 on Blue Ridge Parkway, Bedford County, and on Priest Mountain, Nelson County; defoliation only light (20 percent) to negligible. (For. Pest Sur. Rpt.).

FALL WEBWORM (*Hyphantria cunea*) - NEW MEXICO - Most abundant in poplar trees, severe defoliation at Roswell, Chaves County. (Mathews). Webs 1-10 per tree in many poplar, elm, and fruit trees in Espanola Valley and in Rio Arriba and Santa Fe Counties. (Heninger). MICHIGAN - Larvae active in Genesee County. (Chapman, July 29). RHODE ISLAND - Webbing evident in State. (Mathewson).

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma) - TENNESSEE - Feeding on shade and forest trees in Sevier County. (Williams). NEW YORK - Very prevalent on sycamore and maple in Nassau County past week. Damage could be excessive this year without prompt controls. (N.Y. Wkly. Rpt., July 29).

VARIABLE OAK LEAF CATERPILLAR (Heterocampa manteo) - MARYLAND - Defoliation 80-90 percent on oaks in several-square-mile area between Snow Hill and Pocomoke City, Worcester County. (U. Md., Ent. Dept.).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - IDAHO - Very abundant in dying and dead American elms at location in Melba area, Canyon County. Dutch elm disease cultured and confirmed from diseased trees in area. (Homan).

ELM LEAF BEETLE (Pyrrhalta luteola) - NEW MEXICO - Heavy on Siberian elm at Espanola, Rio Arriba County, and extremely heavy on American and hybrid elms at Pojoaque, Santa Fe County. Adults feeding and laying eggs. Defoliation 90-98 percent on many trees. (Heninger). TEXAS - Active in Upton, Glasscock, Foard, Hardeman, Wilbarger, and Childress Counties. (Neeb, Boring).

APHIDS - MARYLAND - Myzocallis ulmifolii very heavy on elm at College Park and Fort Mead, Prince Georges County. (U. Md., Ent. Dept.). MINNESOTA - Lachnus salignus heavy in Lake City area. (Minn. Ins. Rpt.). CALIFORNIA - Euthoracaphis umbellulariae medium on California bay trees in Samuel P. Taylor State Park at Lagunitas, Marin County. Pemphigus populitransversus medium on cottonwood trees at Jackson, Amador County. (Cal. Coop. Rpt.).

PLANT BUGS - OREGON - Tropidosteptes pacificus caused severe damage to ash trees on golf course at Salem, Marion County. Adults and nymphs very abundant; most of leaves dead on several trees. Heterotoma meriopterum, probably a predator, found on water sprouts at base of some trees. (Brown, Westcott).

MAN AND ANIMALS

MOSQUITOES - NEW MEXICO - Pronounced increase following recent rains. Very annoying to man and animals in Espanola area in Santa Fe and Rio Arriba Counties. (Heninger). Very annoying to growers and farm laborers in Chaves and Eddy Counties. (N.M. Coop. Rpt.). IOWA - Culex spp. egg rafts and larvae in every permanent pond and in few flood pools left from rain 2 weeks ago. (Iowa Ins. Inf., July 13). MINNESOTA - Caught 29,759 females and about equal number of males in 16 light traps July 20-26; Aedes vexans first (over 23,000), Anopheles walkeri second (1,396), and Mansonia perturbans third (1,352). M. perturbans count about same as previous week; will probably decline. Bite collections revealed A. vexans predominant with A. trivittatus, A. cinereus, and A. sticticus in significant numbers. Heavy rains July 30 in 6-county district produced another brood. Extremely heavy rains during past 7 or 10 days flooded Minnesota River. As of July 31, river out of banks in Belle Plain and Jordan area. A. vexans hatch very heavy in Minnesota River and tributary river bottoms. Sampling revealed larvae heavy in swathed oatfield in Belle Plain area. Treated 177,000 acres of breeding sites through July 20; 128,000 treated in 1967. Problem in 1968 will be worst in last 10 years. (Minn. Ins. Rpt.). WISCONSIN - Continue numerous in all counties, but biting more localized than in past few weeks. Rainfall during past weeks replenished some breeding pools in lowland areas. A. vexans continued primary biter in southern counties. Annoyance will continue for several weeks, but severe biting will probably become localized to low, wooded areas. (Wis. Ins. Sur.). MICHIGAN - Problems still intense, will continue as long as present weather pattern holds. (Jones, July 30). SOUTH CAROLINA - Many reports statewide, especially where rainfall great. (Nettles, July 31). RHODE ISLAND - Culex spp. and Aedes spp. abundant throughout State. (Field).

SCREW-WORM (Cochliomyia hominivorax) - Total of 154 cases reported in U.S. July 21-27 as follows: TEXAS - Atascosa 11, Bee 2, Brewster 1, Brooks 30, Crockett 1, De Witt 1, Dimmit 1, Edwards 2, Goliad 2, Gonzales 1, Hidalgo 2, Jim Hogg 7, Jim Wells 5, Karnes 10, Kenedy 1, Kinney 1, Kleberg 8, Live Oak 3, McMullen 2, Nueces 6, Pecos 5, Presidio 1, Real 1, Refugio 3, San Patricio 3, Starr 16, Sterling 1, Sutton 1, Terrell 5, Uvalde 2, Val Verde 1, Webb 1, Willacy 2, Wilson 1, Zapata 2, Zavala 3; ARIZONA - Gila 1, Maricopa 1, Pinal 2, Yavapai 2, Yuma 1; NEW MEXICO - Hidalgo 2. Total of 296 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Baja California 2, Territorio sur de Baja California 114, Sonora 37, Chihuahua 16, Coahuila 89, Nuevo Leon 16, Tamaulipas 22. Total of 16 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 64,872,000; New Mexico 1,580,000; Arizona 8,620,000; California 100,000; Mexico 27,260,000. (Anim. Health Div.).

FACE FLY (Musca autumnalis) - NEW JERSEY - Extremely annoying to dairy cattle and horses in Somerset and Morris Counties. (Ins.-Dis. Newsltr.). MARYLAND - Remains light to medium in Frederick County. (U. Md., Ent. Dept.). VIRGINIA - Moderate on cattle in Carroll and Montgomery Counties. (Allen). WEST VIRGINIA - Ranged 5-35 per face on adult cattle. (Dorsey). INDIANA - Remained at high levels for third consecutive week. Ranged 20-125 (average 35) per head on pastured cattle in central districts. (Huber). WISCONSIN - Slightly annoying cattle in most counties. (Wis. Ins. Sur.). ILLINOIS - Average per head by district: Southeast 6, west 43, southwest 18, northwest 11, and west-southwest 34. (Ill. Ins. Rpt.). IOWA - Up to 35 per head on Jasper County beef cattle; numbers twice those in 1968. (Iowa Ins. Inf., July 13). MISSOURI - Averaged 4.0, 0.9, 1.0, 4.1, 0.9, 1.8, and 0.5 per cow (10-cow samples) on 7 herds in central area. (Thomas). IDAHO - Adults not annoying livestock in Ada and Canyon Counties. (Homan, Portman). Up to 30 (average 8) per face on treated and untreated herds in Latah and Benewah Counties. (O'Keefe). OREGON - Males very abundant on flowers of cowparsnip (Heracleum lanatum) in Elkhorn Ridge at 5,000-6,000 feet elevation near Baker, Baker County, July 25. (Goeden, Westcott).

HOUSE FLY (Musca domestica) - OKLAHOMA - Averaged 10 per scudder grid in untreated Payne County barns. (Okla. Coop. Sur.).

HORN FLY (Haematobia irritans) - WYOMING - Averaged 286 per head on untreated Albany County herds. (Lloyd). COLORADO - Increasing on range cattle. Up to 70 per side in Weld County. (Hantsbarger). OKLAHOMA - Averaged 400 per cow, 500 per yearling, and 1,000 per bull in Payne County. Heavy in Mayes and Garvin Counties; moderate in Cleveland County. (Okla. Coop. Sur.). TEXAS - Heavy on Hudspeth County cattle. (Neeb). MISSISSIPPI - Averaged 20 per head on 416 cattle in Hinds County and 40 per head on 100 Yazoo County cattle. (Dinkins). MISSOURI - Averaged 302.5, 102.5, 13.8, 385.0, 66.7, 337.5, and 335.5 per cow (10-cow samples) on 7 herds in central area. (Thomas). ILLINOIS - Average per head by district: Southeast 429, west 75, southwest 183, northwest 86, and west-southwest 128. (Ill. Ins. Rpt.). WISCONSIN - Slightly annoying cattle in most counties. (Wis. Ins. Sur.). WEST VIRGINIA - Ranged 5-50 per square foot of withers on adult cattle. (Dorsey). VIRGINIA - Adults heavy on cattle in Nelson, Amherst, and Rockbridge Counties. (Rowell). Generally light on cattle in Carroll County. (Allen).

STABLE FLY (Stomoxys calcitrans) - OKLAHOMA - Averaged 5 per head on Payne County cattle. (Okla. Coop. Sur.). ILLINOIS - Average per head by district: Southeast 7, west 2, southwest 18, northwest 0, and west-southwest 33. (Ill. Ins. Rpt.). INDIANA - Increased to 4-36 per head in central districts. (Huber). WISCONSIN - Severely annoyed cattle in several areas, particularly on warmer days; most annoying fly on cattle now. (Wis. Ins. Sur.).

TABANID FLIES - WYOMING - Heavy in Pinedale area, Sublette County. (Lavigne, Neys). Hybomitra frontalis averaged 64 per head in untreated Albany County herds. (Lloyd). NEW MEXICO - Deer flies problem to man at Chama, Rio Arriba County. (Heninger). OKLAHOMA - Tabanus spp. heavy on livestock in Bryan County, moderate in Muskogee County, and light in Mayes County. (Okla. Coop. Sur.). MISSOURI - Horse flies increasing; up to 17 (average 3) per head on cattle in east-central area. (Munson). WISCONSIN - Chrysops spp. very numerous in localized areas near marshes and woodland pools statewide. Sweeps at 15-second intervals above a man's head averaged 3 flies per sweep in a marsh in southern Columbia County. (Wis. Ins. Sur.). NEW JERSEY - Horse flies extremely annoying to dairy cattle and horses in Somerset and Morris Counties. (Ins.-Dis. Newsltr.).

BLACK FLIES - GEORGIA - Seriously annoying horses in Heard County. (Snoddy). WISCONSIN - Biting, particularly Simulium meridionale (turkey gnat), greatly reduced in southern counties. Most annoyance in southern counties near streams. Biting in northern counties more widespread and more severe. (Wis. Ins. Sur.).

CHIGGER MITES - IOWA - Severe in southwest area. (Iowa Ins. Inf., July 13). OKLAHOMA - Eutrombicula sp. heavy and annoying man in Adair and Cherokee Counties. (Okla. Coop. Sur.).

HOUSEHOLDS AND STRUCTURES

A POWDER-POST BEETLE (Minthea rugicollis (Walker)) - FLORIDA - Found in oak flooring in new home at Coral Gables, Dade County. Collected by A.L. Humphries and J.L. Weaver May 6, 1968. Det. by R.E. Woodruff. Confirmed by E.J. Gerberg. This is the first report of an established infestation of this insect in the continental United States. Limited followup surveys have failed to find additional infestations. This lyctid has been intercepted approximately 250 times since 1928 at U.S. ports of entry, mostly in bamboo. This is the most frequently intercepted species of the genus. M. rugicollis is apparently tropicopolitan in distribution. It is known to occur from the Indomalaya region to Madagascar as well as the Antilles, Congo (Kinshasa), Dahomey, Guinea, Hawaii, India, the Indochina region, Ivory Coast, and New Caledonia. (PPC).

A JAPANESE WEEVIL (Calomycterus setarius) - NEW HAMPSHIRE - First reports of many adults moving into buildings July 24 and 26 at Concord and Nashua. (Conklin). WISCONSIN - Movement into houses and motels increased. (Wis. Ins. Sur.).

BENEFICIAL INSECTS

LADY BEETLES - COLORADO - Keeping aphid population in check where counts 40-60 per 100 sweeps on alfalfa and 0-4 per plant on corn. (Johnson). INDIANA - Adults ranged 1-4 per tassel in field corn infested with Rhopalosiphum maidis in central districts. (Huber).

BIG-EYED BUGS (Geocoris spp.) - OREGON - Mostly Geocoris sp. adults averaged 2 per sweep in Wasco County alfalfa field. (Brown). ARKANSAS - G. punctipes principal predator on heads of maturing sunflower in Jackson and Lee Counties; occasional adult and up to 10-15 nymphs per head. (Boyer).

A FLOWER BUG (Orius insidiosus) - ARKANSAS - Principal predator on Lee County cotton. (Boyer).

A THRIPS (Scolothrips sexmaculatus) - MISSOURI - Feeding on mites on cotton. (Harrendorf).

A PHYTOSEIID MITE (Typhlodromus sp.) - MISSOURI - Feeding on phytophagous mites on cotton. (Harrendorf).

HONEY BEE (Apis mellifera) - ALABAMA - Colonies in State declined further in 1968; July 1 total placed at 91,000; 5 percent below 1967. Numbers steadily declined since 1956. Condition of bee colonies reported at 84 percent (off slightly from 85 percent of July 1, 1967) and 4 points below average. Condition of nectar plants 71 percent of normal compared with 75 percent in 1967; low condition reflects effects of June drought. Condition of nectar plants improved during July since most areas received moisture. (Strong, Brisco). GEORGIA - Above average sourwood honey crop being produced in mountains in 1968. (Coleman). OHIO - Total of 146,000 colonies on hand in State July 1, 1968; represents 2 percent reduction from 1967. Some reduction due to heavy rains in late May. Condition of colonies 83 percent July 1 compared with 76 percent July 1, 1967; below 5-year average of 86 percent. Most colonies wintered well and early spring prospects good for honey production after favorable weather in April. Heavy rains in late May plus repeat of excessive swarming of 1967 lowered these early prospects slightly. (Kenney, Tucker).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - In High Plains area, medium to heavy in Mitchell County; damage 15-40 percent. Generally light in about third of fields surveyed in Howard County; 35 percent punctured squares highest infestation in southwest part of county. Generally increasing in Kent County; economic in 10 fields. Infested 24 of 35 fields in control zone in Dickens County; 57 percent punctured squares heaviest. None in traps as of July 30 from Crosbyton west through Dawson County. (Almand). For Boll Weevil in other areas see page 761.

CARIBBEAN FRUIT FLY (Anastrepha suspensa) - FLORIDA - Continued medium to heavy in McPhail traps and in some infested fruits. Larval collections from many fruits at Miami. (Fla. Coop. Sur.).

CITRUS BLACKFLY (Aleurocanthus woglumi) - MEXICO - Biological Control Zone - Infested 644 of 25,244 trees on 12 of 20 properties in Hidalgo, Guemez, Victoria, and Padilla, Tamaulipas. Average percent parasitism in 43 groves in Tamaulipas by municipio: Mante 57, Ocampo 74, Victoria 85, Guemez 47, and Hidalgo 70. Collected 31,300 Prospaltella opulenta (a eulophid wasp) in Hidalgo. Chemical Control Zone - Inspected 61,489 trees in 12 municipios of Nuevo Leon and Tamaulipas; infested 643 trees in Hualahuises, Nuevo Leon, during delimiting survey. Infested 3 trees on 2 properties in Hermosillo out of 8,778 trees inspected in 4 municipios of Sonora and Baja California. Controls applied to aggregate of 16,113 trees on 8 properties in Hualahuises and Linares, Nuevo Leon; initial control applied to 578 trees at Hermosillo, Sonora. (PPC Mex. Reg., June Rpt.).

GRASSHOPPERS - NEBRASKA - Light to heavy in ditches and field margins in Cuming County; ranged 10-18 per square yard at 4 locations. Some light injury to border rows of several fields. Melanoplus spp. dominant species. (Keith, Hill). NORTH DAKOTA - Generally noneconomic in northeast district. Field counts per square yard up to 10 (average 2) in Walsh County and up to 8 (average 2 or less) in Eddy, Benson, Towner, Ramsey, Cavalier, and Pembina Counties. Marginal counts up to 18 (average 2 or less) per square yard in same counties. M. femurrubrum (second to fourth instar), M. sanguinipes (third instar to adult), M. bivittatus (third to fifth instar), and Chorthippus curtipennis (fourth instar to adult) dominant. (Toczek). Generally noneconomic in east-central area. Field counts less than one per square yard in Grand Forks, Nelson, Griggs, Steele, Traill, and Barnes Counties; up to 9 (average 3) per square yard in southeast Cass County. Marginal counts up to 20 (average 10) per square yard in southeast Cass County; averaged 2-4 per square yard in other counties. Dominant species and development in these counties as follows: M. bivittatus and M. sanguinipes (third instar to adult), M. femurrubrum (second to fourth instar), and C. curtipennis (second instar to adult). (Grasser). MINNESOTA - Still higher on roadsides rather than fields. Ranged 9-54 per square yard on roadsides in Chippewa, Pope, Douglas, western Stevens, and eastern Big Stone Counties. Ranged 9-12 per square yard in few alfalfa fields in Chippewa, Renville, and McLeod Counties. Started moving into soybeans, corn, and flax but only feeding in margin rows. M. femurrubrum dominant; mostly in third instar with adults present. M. bivittatus (fourth and fifth instars) and M. differentialis (mostly third and fourth instars) on some roadsides in Big Stone, Chippewa, and Renville Counties; usually small part of grasshopper population. Light, 2-4 per square yard in few alfalfa fields along sand ridges in Roseau County and occasional field in Norman County; M. bivittatus predominant in northwest district. (Minn. Ins. Rpt.). WISCONSIN - Second and third instars averaged 1-2 per 20 sweeps on alfalfa in Dunn, St. Croix, and Pierce Counties. Few fourth instars in more advanced fields in Dane and Green Counties; as high as 16 per sweep. Populations still low. (Wis. Ins. Sur.).

GYPSY MOTH (Porthetria dispar) - NEW HAMPSHIRE - Moths active, egg laying underway July 21 at Freedom, Carroll County. (Mason).

JAPANESE BEETLE (Popillia japonica) - GEORGIA - Adults continue to infest many ornamentals in northern counties. (Coleman). SOUTH CAROLINA - Damaged soybeans on several farms in northern Spartanburg County; controls necessary. (Nettles, July 31). NEW JERSEY - Evident on corn silks in several central and southern counties. (Ins.-Dis. Newsltr.). NEW YORK - Feeding lightly on corn leaves in one field. (N.Y. Wkly. Rpt., July 29). VERMONT - Adult feeding heavy on roses, raspberries, and grapes in some sections of Chittenden County; very common on Virginia creeper. (MacCollom). NEW HAMPSHIRE - Adults unusually heavy at Pelham, Nashua, and Manchester in Hillsborough County. (Mason, July 29). RHODE ISLAND - Numerous complaints compared to prior years. (King).

MEXICAN FRUIT FLY (Anastrepha ludens) - MEXICO - Negative in 210 traps in Tecate and Ensenada, Baja California. Trapped 2,961 marked and 3 unmarked flies in 1,499 aggregate inspections of 350 traps at Tijuana. One marked male taken 40 miles south of Tijuana; 4 native flies taken in this municipio as of June 30. Released 2,870,000 sterile pupae (4 releases) during June at Tijuana; emergence averaged 83.4 percent. (PPC Mex. Reg.).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - Sterile moth releases remained high for second consecutive week; 492,845 received and released. Received 418,470 sterile moths at Bakersfield facility as of June 30. No sterile moths trapped. No field-reared pink bollworm collected in Kern County up to July 26. Treatment to begin July 29 in El Centro district, Imperial County, continuing in Palo Verde; not yet begun in Coachella Valley, Riverside County. Infestation about 5.8 (range 2-13) percent in Bard Valley, Imperial County. Infestation averaged 16.2 percent on 23 randomly selected plantings in 76 monitored fields in Imperial Valley, Imperial County. (Cal. Coop. Rpt.). ARIZONA - None reported in boll and bloom surveys in Cochise and Greenlee Counties. First aerial applications begun August 1 on Graham County farms; 5 applications to be applied at 7-day

intervals. Generally scattered populations in Maricopa County; larvae easily found in formerly infested fields. Few larvae in Pima and Pinal Counties. Heavy on one farm at Yuma, Yuma County. (Ariz. Coop. Sur.). MEXICO - Infested 90-590 blooms per acre in 10 fields at Mexicali, Baja California. Larvae 100-200 per acre in blooms in 6 fields at San Luis, R.C., Sonora. Trapped 7,876 moths in 70 traps at Mexicali and 1,146 in 30 traps in San Luis, R.C. Numbers light on about 2,000 hectares in 7 fields at Caborca, Sonora; negative in traps. Negative in 450 sex lure traps in several municipios in Sonora and Sinaloa. Initial release of 17 million Trichogramma brasiliensis and 8 million T. minutum (minute egg parasites) in field at Mexicali, Baja California; 3 subsequent releases made of 75,000 each. Also 3 releases made of 75,000 each at San Luis R.C. P. gossypiella egg parasitism 2 percent. (PPC Mex. Reg., June Rpt.).

SOYBEAN CYST NEMATODE (Heterodera glycines) - MISSISSIPPI - On farm at Port Gibson, Claiborne County, July 8, 1968. This is a new county record. (PPC).

WHITE-FRINGED BEETLES (Graphognathus spp.) - GEORGIA - Damaging peach foliage in Talbot County. (Parker).

WOOLLY WHITEFLY (Aleurothrixus floccosus) - MEXICO - In 12 collections from Ensenada, Baja California. Det. by L.M. Russell. (PPC Mex. Reg., June Rpt.).

CORRECTIONS

CEIR 18(26):589 - APHIDS - NEW MEXICO - Delete Myzocallis caryaefoliae portion of note. (Heninger).

CEIR 18(28):642 - PEACH TWIG BORER (Anarsia lineatella) - NEW MEXICO - Second sentence only of note applies to PEACH TREE BORER (Sanninoidea exitiosa). (Heninger).

CEIR 18(31):727 - GREEN CLOVERWORM (Plathypena scabra) - IOWA - "Averaged 6 per 100 sweeps ..." Should read "Averaged 6 per 10 sweeps..." (Iowa Ins. Sur.).

HAWAII INSECT REPORT

New State Record - Adults and nymphs of a GRASSHOPPER (*Oedaleus abruptus* (Thunberg)) found in dry grass area at Hickam Air Force Base, Honolulu, Oahu, July 12, 1968. Collected by F. Olson, E. Shiroma, and G. Funasaki. Det. by A.B. Gurney. This species common in southeast Asia (India and southern China) and occurs in Ceylon. Apparently prevalent in dry areas of short grass. Further surveys at the military base revealed infestation generally confined to localized area of about 100 acres. Chemical eradication measures in progress. (Funasaki). This is a new Western Hemisphere record. *O. abruptus* is not known to occur in the continental United States. (PPC).

Turf, Pasture - Adults of a BILLBUG (*Sphenophorus venatus vestitus*) becoming active in Kikuyu grass in Kohala District on Hawaii Island. Larvae light, pupae moderate. Much damage may result with continued dry pasture conditions. (Haramoto). Larvae and damage of a GRASS WEBWORM (*Herpetogramma licarsisalis*) continue to increase in Kikuyu grass pastures at Waimea and Kona Coast of Hawaii Island. Larvae and pupae up to 86 per square foot at Honomalino; adults of *Eucelatoria armigera* (a tachina fly) averaged 38 per sweep. *H. licarsisalis* adults annoying by flying into and resting on walls and ceilings of hospital in Hilo. (Yoshioka).

General Vegetables - BEAN FLY (*Melanagromyza phaseoli*) damage light to severe on bean seedlings during week on farms throughout warm coastal areas on Oahu. Damage severe on soybean, long bean, and snap bean seedlings, especially in Waimanalo. Damage light to medium on yard-long beans at Koko Head, lima beans and snap beans at Poamoho, soybeans at Waialua, and snap beans at Pupukea and Waikane. Numbers very light on wild leguminous plants, such as nanea (*Vigna marina*) and wild pea bean (*Phaseolus lathyroides*), in scattered areas. Heavily damaged snap bean and yard-long bean seedlings in Lawai, Kamakani, Wailua, and Kapaa on Kauai. (Sato et al.). DIAMONDBACK MOTH (*Plutella xylostella*) larvae caused severe damage to some cabbage fields in Kula, Maui, at 2,500-3,600 feet elevation. (Miyahira, Haramoto). Larvae of LEAF MINER FLIES (*Liriomyza* spp.) heavy and causing 50 percent damage in 2-acre green onion field in Waimanalo, Oahu; generally light to medium in other fields on Oahu. (Funasaki).

Fruits - All stages of SOUTHERN GREEN STINK BUG (*Nezara viridula*) heavy on passion fruit in Kula, Maui, at 2,500 feet elevation. (Haramoto).

Ornamentals - CARMINE SPIDER MITE (*Tetranychus telarius*) heavy on rose plants in Kula, Maui, at 2,500 feet elevation. (Haramoto).

Beneficial Insects - An introduced TORTRICID MOTH (*Apotoforma* sp.) medium to heavy and caused defoliation of blackberry plants in Kau and Volcano areas on Hawaii Island. MELASTOMA BORER (*Selca brunella*) larvae light to medium on tibouchina and melastoma plants in Hilo and Mountain View, Hawaii Island. Damage most evident on flower buds and fruits. (Yoshioka). Larvae of a CECIDOMYIID MIDGE (*Zeuxidiplosis giardi*) heavy on young klamath-weed plants about 1.5 miles from release point on Mt. Hualalai, Hawaii Island. Many young plants dead or dying. Newly emerged adults of a KLAMATH-WEED BEETLE (*Chrysolina quadrigemina*) in soil at base of plants on Mt. Hualalai, Hawaii Island. Up to 7 adults on flowering plants 300 yards from original release point. (Funasaki).

WEATHER BUREAU'S 30-DAY OUTLOOK

AUGUST 1968

The Weather Bureau's 30-day outlook calls for temperatures to average below seasonal normals from the Continental Divide eastward to the Ohio and lower Mississippi Valleys. Above normal temperatures are indicated over most areas west of the Continental Divide except for below normal temperatures along the California coast and also over the southern Plateau. Near normal temperatures are in prospect over much of the East. Precipitation is expected to exceed normal over much of the Midwest, southern Plains, and in the Far Southwest. Subnormal amounts are anticipated over the Pacific Northwest. In unspecified areas near normal rainfall is indicated.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D. C. 20250. Price \$5.00 a year.

WEATHER OF THE WEEK ENDING AUGUST 5

HIGHLIGHTS - Temperatures ranged widely over the northern and central Great Plains but were fairly uniform in the West and South. Precipitation was extremely spotty.

PRECIPITATION: Showery weather left an uneven precipitation pattern over most States. Many States received light to moderate showers with a few heavy downpours and some areas which received no rain or only light sprinkles. This is well illustrated by the showery pattern in the central Great Plains. No rain or only light sprinkles fell in parts of the Sand Hills in Nebraska but some southeastern counties received generous thundershowers, some accompanied by damaging winds and hail. Similarly, a few stations in south-central Kansas received no rain but flash flooding occurred along small streams in the northeast due to spotty showers which dumped more than 4 inches of rain in short time intervals. The same general pattern prevailed from the Dakotas to New England in the North and from Arizona to the Carolinas in the South. Heavy thundershowers drenched the Arizona and Utah border on Thursday. More than 3.5 inches at Monticello and almost 4.5 inches at Blanding, Utah, on Thursday caused flooding on the San Juan River. Much of Washington, northern Idaho, and the coastal areas of California and parts of southern Texas received no rain. The scattered afternoon and evening thundershowers replenished soil moisture in many areas but some spots missed by the rains continued very dry.

TEMPERATURE: Temperatures averaged above normal over parts of the Far West; also from the mouth of the Mississippi River along the gulf coast and northward along the Atlantic coast to New Jersey and below normal over most of the interior of the Nation. Parts of the central Great Plains averaged 4° to 7° cooler than normal. Afternoon temperatures in the Far West reached 90° or higher on most days and 100° on a few days. Maximums of 100° or warmer were common in the southwestern deserts on every afternoon. Along the gulf, afternoon temperatures climbed regularly into the 90's. The largest temperature variations occurred in the northern and central Great Plains. To illustrate: Russell, Kansas, registered 104° Tuesday but only 74° Wednesday afternoon, 78° on Friday, and 101° on Saturday. At Williston, North Dakota, the temperature reached 98° on Monday afternoon but only 69° on Tuesday. By Sunday, most of North Dakota experienced 91°-96° maximums. In the Northeast, the week began cool and comfortable but became hot and humid by the weekend. (Summary supplied by Environmental Data Service, ESSA.)

LIGHT TRAP COLLECTIONS

TOWA	BL	30	11	3	3	39
Kanasha 7/26-31	BL	30	11		3	39
MINNESOTA						
Crookston 7/24-31						
Fergus Falls 7/24-31					1	2
Shakopee 7/24-31					6	4
Worthington 7/24-31					1	
MISSISSIPPI						
Stoneville 7/27-8/2	72-93 trace	2BL	1	12	4	89 35
MISSOURI						
Portageville 7/27-8/2		5			30	2 12 21
NEW JERSEY						
Aura 7/25-31	BL	3			18	4 33 11
Evesboro 7/25-31	BL	5			34	47 2
Plainsboro 7/25-31	BL	5			34	2 47 2
Seabrook 7/25-31	BL	31			22 32	30 134
NORTH DAKOTA						
Bowman 7/29		1			1	9
Waxahatchie 8/1						
Hazleton 7/30						1
OHIO						
Hilliard 7/25-31	BL	75			34	15 104
Wooster 7/25-31	BL	54			12 33	284
SOUTH DAKOTA						
Brookings 7/26-8/1	BL	5			27	19
TEXAS						
Denisonville 7/27-8/2	73-94 0.02	2BL	1	3 55 7	2	3
Waco 7/27-8/2	77-97 none	9		202 14 123	2 11 6	275 428 556
WISCONSIN						
Madison 7/24-31	BL	14	8		2	9 17

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August 16, 1968

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

All reports and inquiries pertaining to this release, including the mailing list, should be sent to:

Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

Previously reported infestations of GREENBUG on sorghum developed into large-scale outbreaks. Texas, Oklahoma, Nebraska, and Kansas hardest hit. (p. 781).

CORN EARWORM heavy on corn in Pontotoc County, Oklahoma, and on 300 acres of sorghum in Montgomery County, Mississippi. CORN LEAF APHID heavy in all sorghum in Arkansas Valley of Colorado; numerous on young sorghum in Oklahoma Panhandle. (p. 782).

EUROPEAN CORN BORER severe in corn in Weld County, Colorado; adults continue heavy in Maryland, Delaware, and New Jersey. SOUTHWESTERN CORN BORER heaviest in sorghum in many years in Maricopa County, Arizona; larvae and damage more widespread than in 1967 in Tuscaloosa County, Alabama. (p. 783). CORN ROOTWORMS numerous in corn in northern areas of Illinois and Missouri. CORN FLEA BEETLE damage heavy in many cornfields in northern Maryland. (p. 784).

GREEN CLOVERWORM damage evident on soybeans in central Wisconsin and north-central Iowa. (p. 787).

BOLL WEEVIL damage serious in western Tennessee; numbers increasing at Florence, South Carolina, and in McLennan and Falls Counties, Texas. (p. 788). BOLLWORM moths high at Florence, South Carolina; larval damage serious in western Tennessee. (p. 789). SPIDER MITES severe on cotton in western Tennessee; problem in northern and central Alabama, and increasing in north-central delta area of Mississippi. (p. 790).

MEXICAN BEAN BEETLE numbers and damage serious on canning beans in Fryeburg area of Maine; heavy on snap and lima beans throughout Maryland. (pp. 791-792).

APPLE MAGGOT adult emergence expected to peak this period in southwest Michigan. (p. 793).

MIMOSA WEBWORM larvae heavy in southeast Missouri; damage to honeylocust more widespread than for several years throughout Indiana. (p. 797).

STABLE FLY annoyance severe on cattle in certain areas of Wisconsin and Indiana. (p. 799).

Detection

BRAMBLEBERRY LEAFHOPPER (p. 795) and MOTTLED RUSTIC (p. 800) found established in Washington; first records for U.S.

New State records include an ARMORED SCALE in Arizona (p. 785) and A RHOPALID BUG in Hawaii (p. 802).

For new county records see page 803.

Special Report

European Chafer Quarantine Map. Centerfold.

Reports in this issue are for week ending August 9 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING AUGUST 12

HIGHLIGHTS: The Far West continued warm and dry. A cold front brought a pleasant weekend to the Central and East following several days of unusually hot humid weather.

PRECIPITATION: Heavy rains fell early in the week along a front that extended across our northern border States from the western Great Plains to New England. Numerous tornadoes and violent thunderstorms occurred from South Dakota and Iowa to Lower Michigan. Most of the tornadoes struck rural areas. A few farmsteads suffered damage to buildings and trees. Besides the heavy showers that accompanied the violent thunderstorms and tornadoes along the front, airmass thunderstorms developed in the hot, humid air south of the front. The showers were mostly light producing an inch or less of rain. In some areas, rainfall ranged from 1 to 2 inches and widely scattered storms dropped several inches in short time intervals. On Thursday, a severe thunderstorm at Burlington, Vermont, dropped hail up to 3 inches in diameter and the wind at Blue Hill Observatory, Milton, Massachusetts, gusted to 90 m.p.h. Heavy downpours fell Friday night in southeastern Nebraska, eastern Kansas, southwestern Missouri, and northern Arkansas with spots recording 4 to 5 inches of rain by Saturday morning. Little or no rain fell in the Far West. Forest fire danger increased in Washington and lightning started hundreds of fires in Oregon. Dust storms occurred in the irrigated valleys of southern Arizona.

TEMPERATURE: Through most of the week, sweltering heat and high humidity maintained a firm grip over most of the Nation from the Rocky Mountains to the Atlantic coast. Cool weather occurred only along our northern border north of the quasi-stationary front that stretched from Montana to Maine. In some eastern areas, last week was the hottest of the season. In North Carolina, it was the hottest week in almost 2 years. Beloit, Wisconsin, registered 100° on Thursday, the first time in several years that the temperature has gone so high anywhere in the State. Temperatures reached 100° to 105° on several afternoons from southern South Dakota to northern Texas. The front began moving late in the week and by the weekend, a broad stream of cool, dry air was bringing unseasonably cool weather and clear skies to much of the central and eastern portions of the Country. Numerous locations in the Northeast registered temperatures in the 40's early Monday morning, August 12. The Far West continued warm to hot throughout the week. The Rocky Mountains and western Plains averaged cooler than normal. Most of the East averaged warmer than normal in spite of the weekend temperature drop. (Summary supplied by Environmental Data Service, ESSA.)

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

GREENBUG (*Schizaphis graminum* (In broad sense))* - **SOUTH DAKOTA** - Destroyed 120 acres of sorghum-sudan crosses 2-3 inches high near Lesterville, Yankton County. Damaged sudan and crosses of sorghum and sudan in Moody, Turner, Yankton, and Hutchinson Counties. Ranged 4,500-5,000 per plant on some sorghum. Killed several fields of sorghum and sorghum crosses near Parkston, Hutchinson County. Predators light in those fields surveyed. (Jones, Kantack). **NEBRASKA** - Infestations declined sharply in eastern area due to parasitism. Parasites destroyed up to 95 percent of aphids in 2 Saunders County fields August 6. (Roselle). Still high on untreated sorghum near North Platte, Lincoln County; ranged 1,600-2,300 per leaf August 8. Predators and parasites increasing slowly. (Staetz). **KANSAS** - Infesting most sorghum fields throughout State. Damaging numbers in many fields; up to 2,000 per leaf. Severely damaging late-planted fields. In most areas, populations continue to increase except in occasional heavily infested fields where predators and parasites established. Parasitism ranged 25-50 percent in one heavily infested field in Pottawatomie County. (Brooks et al.). **OKLAHOMA** - Continues heavy in sorghum in Texas, Cimarron, and Beaver Counties. Counts range 1,500-5,000 per plant on leaves, up to 50 per head on plants with heads. Many fields being sprayed. Young sorghum plants and volunteer small grain plants killed in many areas. Also reported causing severe damage to broomcorn in Cimarron County. High counts also reported from Harper, Woodward, Ellis, Beckham, Washita, Blaine, Jackson, and Marshall Counties. Parasites and predators active in west-central and southwest areas and in Payne County; appear to be causing some decrease in numbers. Survey shows only occasional fields lightly infested in Noble, Kay, and Grant Counties. (Okla. Coop. Sur.). **ARIZONA** - Unidentified aphid generally heavy on sorghum in most areas of Cochise County; controls applied. (Ariz. Coop. Sur.). **TEXAS** - The aphid is a serious problem on sorghum in the Panhandle and parts of Rolling Plains. Widespread treatment is being carried out. (Green). Normally, greenbug does not cause serious damage to sorghum in this country. The aphid generally does not reproduce after temperatures reach 90° or higher. However, infestations in this outbreak became worse between June and the latter part of July. USDA and State officials will meet at Fort Collins, Colorado, August 15-16 to discuss current and future plans to combat greenbug outbreaks on sorghum. ARS, in cooperation with affected States, is studying the biology of the pest on sorghum and conducting aerial insecticide tests. (ARS) For previous reports on sorghum see notes carried under greenbug in CEIR 17(37):847, 18(22):461, 18(23):485, 18(24):509, 18(26):573, and 18(31):722. (PPC).

ASTER LEAFHOPPER (*Macrostelus fascifrons*) - **WISCONSIN** - Increased in lettuce fields at Montello; problems somewhat greater than normal but far less than at this time in 1967. (Wis. Ins. Sur.). **COLORADO** - Undetected in Otero and Pueblo County lettuce fields as of August 3; ranged 1-584 per night in light traps last 2 weeks. (Schweissing).

BET BEET LEAFHOPPER (*Circulifer tenellus*) - **WYOMING** - Curly-top symptoms affected 72 of 3,200 plants in 16 sugarbeet fields in Washakie and Big Horn Counties. Adults averaged 0-2 per 100 sweeps in 6 fields checked. (Petersen, Marshall). **UTAH** - Ranged 2-5 per 10 sweeps in Russian thistle in Deseret and Delta area of Millard County. (Knowlton, Aug. 1). **COLORADO** - Ranged 0-5 per 100 sweeps on southeastern area sugarbeets. (Schweissing).

CORN EARWORM (*Heliothis zea*) - **NEW YORK** - Appeared late in 1968. First noted on sweet corn August 1 in Hudson Valley when 2 sixth instars found in 300 ears at harvest in Stone Ridge; no moths trapped. (N.Y. Wkly. Rpt.). **NEW JERSEY** - Adults increasing throughout State; problems on corn should increase sharply. (Ins.-Dis. Newsltr.). **DELAWARE** - Adults increased in blacklight traps in Sussex County; averaged 3-4 per night. (Burbutis). **MARYLAND** - No adults taken at Centreville blacklight trap yet. Very little damage to sweet corn to date. Less than 1 percent damage to ears in 7 acres of sweet corn near Wye Mills, Talbot County. (U. Md., Ent. Dept.). **INDIANA** - Infestation less than 2 percent (very

* According to recent taxonomic studies by L.M. Russell. The aphid on sorghum appears to be this species.

light) on late sweet corn and milk-stage field corn in south districts. No adults in blacklight traps as of August 6. (Huber). MINNESOTA - Low on field corn in southern counties; higher on sweet corn. (Minn. Ins. Rpt.). NEBRASKA - Low, infested less than 1 percent of ears in sweet corn field near Mead, Saunders County (Keith), and in Dawson County field corn (Raun). COLORADO - Larvae low on southeast area corn. (Schweissing). OKLAHOMA - Heavy on Pontotoc County corn, moderate to heavy on Kingfisher County grain sorghum; light on Bryan County peanuts. (Okla. Coop. Sur.). MISSISSIPPI - Heavy on 300 acres of sorghum in Montgomery County; controls required. (Dinkins). ARKANSAS - Few larvae in soybeans in Poinsett County; first of season. (Leslie, Boyer). CALIFORNIA - Larvae medium on corn in Concord, Contra Costa County, and Redding, Shasta County. (Cal. Coop. Rpt.).

CORN LEAF APHID (*Rhopalosiphum maidis*) - MARYLAND - Continued to increase on corn; infestations up to 100 percent in all areas. Feeding in whorls and on husks. (U. Md., Ent. Dept.). ALABAMA - Maize dwarf mosaic more widespread on corn in Tuscaloosa County. Numbers variable in all fields. (Holstrum et al.). MICHIGAN - Light to moderate on sweet corn foliage statewide; did not affect ear production. (Thompson, Patterson, Aug. 5). *Empusa* fungus should control in some fields. (Jones, Aug. 5). ILLINOIS - Moderate to heavy on late-whorl to early silk-stage corn. Alates common in late-maturing fields; migrated from earlier maturing fields. (Ins. Sur. Bull.). WISCONSIN - Highest in southeast and in some central area cornfields. Some fields treated in Waukesha County. Lady beetle adults and larvae numerous in some fields. (Wis. Ins. Sur.). OKLAHOMA - Averaged up to 2,000 per whorl on young sorghum in panhandle counties. Up to 150 per whorl in Woodward County; moderate in Kay County. (Okla. Coop. Sur.). COLORADO - Heavy in sorghum checked in Arkansas Valley; some controls may be needed. Up to 500 per corn plant in Boulder, Weld, Larimer, and Morgan Counties; noneconomic in east area. (Johnson, Schweissing). NEW MEXICO - Corn and sorghum treated at Roswell, Chaves County. (Mathews). ARIZONA - Ranged 1-20 per plant in 80 acres of sorghum in Stewart District, Cochise County. (Ariz. Coop. Sur.). UTAH - Treated 55 acres of barley at Sutherland, Millard County. (Knowlton, Aug. 1).

POTATO LEAFHOPPER (*Empoasca fabae*) - NEW JERSEY - Ranged 10-354 (average 92) per field (25-sweep samples) in 5 fields in central area. (Ins.-Dis. Newsltr.). OHIO - Adequate rain through July and into August prevented widespread damage common to alfalfa at this time in 1967. Crop growth good with little yellowing past 2 weeks. Ranged 1-3 per sweep in Wayne County where harvest of third cutting begun; some yellowing. Damage spotty due to varying moisture conditions. (Glass). Extensive loss could occur to alfalfa if moist conditions change. (Rose). MICHIGAN - Increasing, but no yellowing yet; 6-28 per sweep in 6 Monroe and Lenawee County fields. (Jones, Aug. 5). INDIANA - Light to moderate yellowing on bud stage to early bloom alfalfa in south-central and southwest districts. Nymphs 7-45 (average 16) per sweep. (Huber). WISCONSIN - Yellowed some alfalfa in central sands area; up to 30 per sweep. Light in other areas. Adults 3 per plant on Columbia County lima beans; scarce on potatoes and snap beans in central area. (Wis. Ins. Sur.). MISSOURI - Ranged per 10 sweeps on alfalfa from 120 in central area to 400 in southeast area. (Munson).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - UTAH - On alfalfa seed and forage in west Millard County. Damaged few fields at Sutherland. Light in east Millard County, at Beaver, Beaver County, and at Parowan and Cedar City, Iron County. (Knowlton, Aug. 1). COLORADO - First of season on alfalfa in Crowley, Otero, Bent, and Prowers Counties; up to 60 per 100 sweeps. (Schweissing). NEW MEXICO - Up to 25 per 10 trifoliolate leaves in alfalfa in east Valencia County. (Heninger). OKLAHOMA - Increasing in scattered areas in western and panhandle counties. Controls required in few fields. Ranged 300-400 per 10 sweeps in Tillman County; heavy in Kiowa and Kingfisher Counties. (Okla. Coop. Sur.). KANSAS - Light, 5-15 per 10 sweeps in alfalfa in Shawnee, Douglas, and Franklin Counties. (Simpson). NEBRASKA - Ranged 22-55 per 20 sweeps in Washington County alfalfa field. (Keith).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - MAINE - Common in corn entering tassel stage in southern area; serious problem indicated. (Boulanger, Aug. 6). NEW YORK - Moths caught increased slowly to several a night on Hudson Valley sweet corn; about one per sweep in field borders at Lamontville August 1. Adults heavy 2 weeks before expected peak. Egg masses few on whorl-stage plantings; first instars light in few plantings. (N.Y. Wkly. Rpt.). NEW JERSEY - Moths still plentiful in State. (Ins.-Dis. Newsltr.). DELAWARE - Adult flights continue heavy in Sussex County blacklight trap collections. (Burbutis). MARYLAND - Continues heavy in all areas. Adults averaged 87+ per night in light trap at Centreville, Queen Annes County. (U. Md., Ent. Dept.). INDIANA - Ear infestations very light, ranged 0-6 (average 2) percent on milk-stage field corn in south-central and southwest districts; egg masses 1-8 per 50 plants on late corn in same districts. Adults common in field borders, roadsides, and alfalfa in south-central district, but much less common in southwest district. (Huber). ILLINOIS - Abundant in some north-central areas; indicates greater potential second-generation population than expected. About 70 percent of second-generation moths emerged in northern sections. Egg laying will continue in central section for 1-2 weeks and in northern sections for 2-3 weeks. (Ins. Sur. Bull.). Larval average per 100 plants by district: Central 0.3, east 1.6. Average percent plant infestations by district: Central 0.8, east 3.7. Larvae up to 1 per plant (90-100 percent emergence) and egg masses 0-20 per 100 plants (10 percent hatch) in west-southwest district. (Ill. Ins. Rpt.). MISSOURI - First-generation emergence almost complete in central and northern areas. Egg laying begun about 2 weeks ago; should be at peak. First generation generally not heavy, but very heavy in isolated spots. (Munson). WISCONSIN - Flight increasing; some egg laying begun in advanced area of southern Dane County. Development gradual with mostly fifth instars at Plainfield, Waushara County, and at Poynette (30 percent empty pupae) in Columbia County. (Wis. Ins. Sur.). SOUTH DAKOTA - Larvae infested 70 percent of corn in irrigated field in northern Moody County. Larvae still small and feeding in whorls. (Kantack). NEBRASKA - First generation averaged 244 per acre and infested 2.7 percent of stalks in 30 Hall County cornfields; lowest summer population in 14 years for this county August 2. Averaged 1,132 per acre and infested 16.0 percent of stalks in Cuming County; second lowest summer population recorded for this county in last 14 years. (Hill, Keith). COLORADO - Larvae severe in Prospect Valley, Weld County. Damaged 90+ percent of corn plants in one field. Det. by N.H. Weisman. (Hantsbarger, Alldredge).

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - ARIZONA - Heaviest in sorghum in many years in Maricopa County. Third generation in progress with partial fourth expected. "Hot spots" noted around Gilbert and Kyrene, Maricopa County. Averaged one per plant in 160-acre field in Stewart District, Cochise County. (Ariz. Coop. Sur.). KANSAS - First-generation emerging in south-central area. Only pupae and empty pupal cases found in fields. First-generation infestation averaged 10-12 percent in fields checked. (Simpson). ALABAMA - Larvae and damage more widespread than in 1967 on corn in Tuscaloosa County. (Holstrum).

WESTERN BEAN CUTWORM (*Loxagrotis albicosta*) - NEBRASKA - Averaged about 7 percent of plants infested in 30 cornfields in Hall County. First to third instars averaged 1.2 per infested plant. (Hill, Keith, Aug. 2). Larvae ranged 1-7 per ear on 5-100 percent of plants in several Dawson County fields; few fresh egg masses. Larvae ranged 1-4 per ear throughout Kearney County field; none found in nearby later-maturing cornfield. Second instar to nearly full-grown larvae noted in infested fields. (Raun). Up to 6 per plant (average 1 per 4 plants) in field near North Platte, Lincoln County. Fresh egg masses and first instar to nearly full-grown larvae present. (Staetz).

STALK BORER (*Papaipema nebris*) - NEBRASKA - Most larvae full grown in eastern area; left giant ragweed to pupate in soil. Ranged from fourth instar to full grown in central district; most remained in ragweed. Parasitism very low in all areas. (Keith). MAINE - Noneconomic although frequently found in corn in southern area. (Boulanger, Aug. 6).

FALL ARMYWORM (Spodoptera frugiperda) - NEW YORK - Several moths trapped on Hudson Valley sweet corn; small larvae in whorls August 1. (N.Y. Wkly. Rpt.). MARYLAND - Damaged 2 percent of 20-acre sweet corn planting near Ingleside, Queen Annes County. (U. Md., Ent. Dept.). COLORADO - Larvae light on southeastern area corn. (Schweissing).

BEEF ARMYWORM (Spodoptera exigua) - OKLAHOMA - Damaged sorghum in isolated areas in western counties. Up to 5 per plant destroyed few fields. (Okla. Coop. Sur.).

CORN ROOTWORMS (Diabrotica spp.) - ILLINOIS - Abundant in many fields in northern half of State. (Ins. Sur. Bull.). WISCONSIN - D. longicornis (2-3 per ear common) feeding on ear tips in Rock County. Ranged 5-6 per ear in some Waukesha County cornfields and up to 10 per silk in Crawford County. Emergence far from complete despite presence on fresh silks. Mostly D. longicornis although D. virgifera adults more common in area than in 1967. D. virgifera and D. longicornis ratio 1:50 in one Rock County field and a few Crawford County fields. Mostly pupae August 6 at 5 Rock County sites. (Wis. Ins. Sur.). MINNESOTA - D. longicornis and D. virgifera adults increasing; surveys in southern counties indicate emergence will peak in little over a week. Third instars in soil and roots, but most in prepupal and pupal stage or adults ready-to-emerge. Light with feeding on silks or tassels: 2 per plant (highest) in lighter soil areas of Dakota County. Most cornfields will complete pollination before peak emergence. (Minn. Ins. Rpt.). SOUTH DAKOTA - Adults light as emergence late again. Expect some buildup next 10 days. Most corn will be pollinated prior to peak adult populations. (Jones, Aug. 2). NEBRASKA - D. virgifera and D. longicornis very light in 30 Hall County fields. Mostly D. virgifera 1-5 (average 3) per plant. (Hill, Keith, Aug. 2). Up to 20 per plant in some Dawson County fields. (Raun). Ranged 2-6 per plant in 6 Lincoln County fields. (Staetz). MISSOURI - Adults of D. virgifera, D. longicornis, and D. undecimpunctata howardi continue quite numerous in many cornfields throughout northern two-thirds of State. Silk feeding generally light in earlier planted fields despite numerous adults. Adults infesting late-planted fields that are tasseling and silking; some pollination problems may develop. (Munson).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - ILLINOIS - Found in Kankakee and La Salle Counties past 2 weeks for new county records. (Ins. Sur. Bull.). SOUTH DAKOTA - Adults one per stalk in corn-on-corn field near Beresford, Lincoln County, and 2 per stalk in northern Yankton County as of August 2. Third instars and pupae still in soil. Adults expected to increase next 10 days. Pollination expected to occur ahead of major silk damage by adults. Adults currently increased in some southeastern area cornfields. Adults up to 6 per stalk in 80-acre field near Beresford, Lincoln County. Controls applied to one field near Parkston, Hutchinson County. Adults up to 6 (average 2) per plant in cornfield east of Oral, Fall River County. (Jones, Kantack). OKLAHOMA - Adults up to 50 per row foot; controls required on corn in local areas of Texas County. (Okla. Coop. Sur.). COLORADO - Adults 0-3 per corn plant in Larimer, Weld, Boulder, and Morgan Counties. Adults noted in Arkansas Valley. (Johnson, Schweissing).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - NEW YORK - Adults on field corn silk August 1 at Hurley, Ulster County. (N.Y. Wkly. Rpt.). DELAWARE - Adults increasing in blacklight trap collection in New Castle County. (Bray). OHIO - Adults emerging throughout State. Lodged corn no apparent problem this season, but numerous adults may affect pollination. (Rose). MICHIGAN - No adults on field corn tassels (90 percent tasseled) August 1 in 130 miles from Jackson, Jackson County, to New Buffalo, Berrien County. No severe damage. General population decline of 3-4 yrs. ago continuing. (Jones).

CORN FLEA BEETLES (Chaetocnema spp.) - MARYLAND - C. pulicaria damage continues medium to heavy statewide. Damage heavy in up to 80-100 percent of corn stands in many fields in Frederick, Anne Arundel, Cecil, Kent, and Queen Annes Counties. (U. Md., Ent. Dept.). ARIZONA - C. ectypa averaged 160 per 100 sweeps in all

sorghum fields checked at Yuma, Yuma County; 1,200 per 100 sweeps in one field. (Ariz. Coop. Sur.).

NITIDULID BEETLES (Carpophilus spp.) - WASHINGTON - Carpophilus sp. infested 75 percent of ears of sweet corn in gardens July 29 at Zillah, Yakima County. (Keene). MARYLAND - C. lugubris infestations increasing, up to 25-60 percent in sweet corn on Eastern Shore. (U. Md., Ent. Dept.).

CHINCH BUG (Blissus leucopterus) - KANSAS - Up to 50 per plant in headed sorghum field in Saline County. (Simpson).

A WHITEFLY (Aleurocybotus occiduus) - ARIZONA - Heavy in young sorghum at Yuma, Yuma County. (Ariz. Coop. Sur.).

SPIDER MITES - WYOMING - Light on bottom 1-2 leaves of plants in cornfields in Washakie, Park, and Big Horn Counties. (Parshall). NEBRASKA - Small colonies of Tetranychus urticae beginning to discolor lower leaves of corn in Dawson County fields. (Raun). COLORADO - T. urticae light on eastern area corn; burn as high as sixth and seventh leaf in many fields. (Johnson, Schweissing).

TURF, PASTURES, RANGELAND

AN ARMORED SCALE (Chortinaspis subchortina) - ARIZONA - Collected on St. Augustine grass at Phoenix, Maricopa County, November 13, 1967, by P. Min. Det. by R.F. Wilkey, confirmed by L.M. Russell and H. McKenzie. This is a new State record. (Ariz. Coop. Sur.).

A LEAFHOPPER (Deltoccephalus grex) - CALIFORNIA - Adults heavy on bluegrass lawns, generally in Willows, Glenn County. Much less evident on lawns in 1968 than in several years. (Cal. Coop. Rpt.).

A WHITEFLY (Aleurocybotus occiduus) - ARIZONA - Averaged about 20,000 per 100 sweeps in Sudan grass field at Yuma, Yuma County. (Ariz. Coop. Sur.).

SOD WEBWORMS - ILLINOIS - Moths flying over lawns at dusk. Second generation laying eggs past 2-3 weeks. (Ins. Sur. Bull.). OKLAHOMA - Crambus spp. larval damage noted on golf courses in Tulsa and Kay Counties. (Okla. Coop. Sur.). ARIZONA - Crambus spp. heavy in 3 tifgreen lawns in northwest Phoenix, Maricopa County. (Ariz. Coop. Sur.).

A PSYCHID MOTH (Apterona crenulella) - UTAH - Numerous on big sage and other range plants in area near Laketown, Rich County; lighter in mountains west of Garden City and Woodruff. Light in areas checked in Logan Canyon, Cache County. Numerous on sage, rabbitbrush, and some other range plants at Goshen, Utah County. (Knowlton, Aug. 1).

RHODES-GRASS SCALE (Anthonia graminis) - ARIZONA - Moderate on many Bermuda and St. Augustine grass lawns in Salt River Valley area, Maricopa County; averaged 14 infested sheaths per foot. (Ariz. Coop. Sur.).

CHINCH BUG (Blissus leucopterus) - OKLAHOMA - Heavy in 20 percent of lawns checked in Marshall County. (Okla. Coop. Sur.).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - MAINE - Adult emergence essentially complete by July 29 in York and Cumberland Counties. Much variation in feeding damage on heavily infested second-growth alfalfa in late July and early August. (Boulanger). MICHIGAN - Adults (1968 brood) almost 1 per sweep in Lenawee and Monroe Counties; cocoons and pupae difficult to locate. Mostly third instars ranged 7-32 per 200 sweeps. (Janes, Aug. 5). WISCONSIN - Dane, Milwaukee, and Green Counties are

new county records. (Wis. Ins. Sur.). SOUTH DAKOTA - Light, 4 adults and 10 second and third instars per 100 sweeps, in second-growth alfalfa near Spearfish, Lawrence County. (Jones). COLORADO - Larvae 0-700 per 100 sweeps on alfalfa in Otero and Pueblo Counties. Damage not noted. (Schweissing). WYOMING - Larvae 0-500 (average 78) per 100 sweeps in second-crop alfalfa in Johnson, Sheridan Park, Big Horn, and Washakie Counties. Adults 27 per 100 sweeps in Johnson County; some noted in other counties. About 40 percent of second-crop alfalfa harvested. (Parshall). UTAH - Larvae 1-5 per 10 sweeps in most alfalfa in Millard, Utah, Salt Lake, and Juab Counties. Very light, 0-1 per 10 sweeps, in Millard County alfalfa. Not heavy at Beaver, Beaver County, or at Parowan and Cedar City, Iron County. (Knowlton, Aug. 1). OREGON - Adults 1 per 100 sweeps in alfalfa field near Aurora, Marion County; no larvae. (Westcott).

PEA LEAF WEEVIL (*Sitona lineatus*) - OREGON - Averaged 3 per sweep in mature, second-cutting alfalfa field near Aurora, Marion County; leaf damage 10 percent. (Westcott).

ASIATIC OAK WEEVIL (*Cyrtopistomus castaneus*) - INDIANA - Adults noted in alfalfa for first time this season in southernmost 2 tiers of counties of south-central area; ranged 1-2 per 5 sweeps. Adults common around lights and entering buildings in same area. (Huber). MISSOURI - One adult collected from red clover in Scott County for a new county record. (Hanning, Huggans).

CORN ROOTWORMS (*Diabrotica* spp.) - NEBRASKA - Adults increasing on alfalfa; *D. virgifera* averaged 15 and *D. undecimpunctata howardi* 10 per 20 sweeps in 2 Washington County fields. (Keith).

FLEA BEETLES (*Systema* spp.) - ARIZONA - Averaged 98 per 100 sweeps in alfalfa field at Yuma, Yuma County. (Ariz. Coop. Sur.).

BLACK BLISTER BEETLE (*Epicauta pennsylvanica*) - SOUTH DAKOTA - Damaged alfalfa in Beadle and Lake Counties; controls applied in some cases. (Ball, Berndt). COLORADO - Adults 20-50 per 100 sweeps on alfalfa in Boulder, Weld, Larimer, and Morgan Counties. (Johnson).

GREEN CLOVERWORM (*Plathypena scabra*) - INDIANA - Larvae ranged from 2 per 5 sweeps to 8 per sweep (average 2 per sweep) on southwest and south-central area alfalfa. (Huber). WISCONSIN - Nearly full-grown larvae common on alfalfa in central area; averaged 2 per sweep in many fields. (Wis. Ins. Sur.).

BEET ARMYWORM (*Spodoptera exigua*) - ARIZONA - Averaged 600 per 100 sweeps in some alfalfa in Yuma Valley; larval damage in some fields in Yuma Valley. (Ariz. Coop. Sur.). NEW MEXICO - Larvae averaged 1-3 per 25 sweeps in eastern Valencia County alfalfa. (Heninger).

ALFALFA CATERPILLAR (*Colias eurytheme*) - WISCONSIN - Adults prevalent in central area alfalfa. (Wis. Ins. Sur.). COLORADO - Larvae 10-70 per 100 sweeps on alfalfa in Boulder, Larimer, Weld, and Morgan Counties. (Johnson). NEW MEXICO - Larvae averaged 1-2 per 25 sweeps in alfalfa in Los Lunas area, Valencia County. (Heninger).

PEA APHID (*Acyrtosiphon pisum*) - NEVADA - Up to 300 per sweep in alfalfa seed fields in Lovelock, Pershing County; controls required. (Conley). UTAH - Sometimes very numerous in succulent alfalfa. Averaged 300+ per 10 sweeps in some fields in Cedar City, Iron County; 50-1,000+ per 10 sweeps in occasional Delta, Hinckley, Deseret, and Boggs areas of Millard County. (Knowlton). WYOMING - Nymphs and adults averaged 67 per 100 sweeps in alfalfa in north-central area. (Parshall). COLORADO - Ranged 50-15,000 per 100 sweeps on eastern area alfalfa. (Schweissing, Johnson). NEW MEXICO - Light to moderate in alfalfa in Los Lunas area, Valencia County. (Heninger). NEBRASKA - Increasing slightly on alfalfa in eastern area; ranged 95-115 per 20 sweeps in 2 Washington County fields. (Keith).

MEADOW SPITTLEBUG (Philaenus spumarius) - MISSOURI - Collected in Scott County by L.R. Hanning and J.L. Huggans for a new county record. (Munson).

LEAFHOPPERS (Aceratagallia spp.) - ARIZONA - Averaged 1,973 per 100 sweeps in alfalfa field at Yuma, Yuma County. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - INDIANA - L. lineolaris nymphs 3 per sweep on southern district alfalfa. (Huber). WYOMING - Adults and nymphs 34-600 (average 125) per 100 sweeps in alfalfa in north-central area. (Parshall). COLORADO - Adults and nymphs 50-60 per 100 sweeps on alfalfa in north-central counties; light in Arkansas Valley. (Johnson, Schweissing). UTAH - L. elisus, L. hesperus, and Lygus spp. high in Millard County; repeated controls on alfalfa seed fields. (Knowlton, Aug. 1). ARIZONA - Counts per 100 sweeps ranged 200-420 (average 310) in alfalfa at Yuma, Yuma County, and averaged 425 in Pinal County. (Ariz. Coop. Sur.). NEVADA - Especially nymphs increasing in alfalfa seed fields in Lovelock, Pershing County; controls required. (Conley).

GRASSHOPPERS - MINNESOTA - Highest, 36-45 per square yard, in alfalfa and grass fields in western half of Sherburne County. Economic south of Luverne, Rock County; controls expected in some fields this week. Ranged 8-18 per square yard in some alfalfa in Pipestone, Nobles, and Chisago Counties. Melanoplus femurrubrum (second instar to adult) predominant in all fields surveyed. M. differentialis (fourth and fifth instar) and M. bivittatus (adults) light in some fields and roadsides. Roadside counts in Chippewa and Swift Counties remain high, 24-36 per square yard. M. femurrubrum predominant, but in many cases "slant-faced" species 30 percent of population. Margin feeding light in soybeans and cornfields. (Minn. Ins. Rpt.). WISCONSIN - Third, fourth, and a few fifth instar M. femurrubrum up to 15 per square yard in few scattered areas, primarily sandy soil fields; lighter than in previous years. Some damage to older alfalfa field in Wood County with up to 50 per square yard; many M. sanguinipes adults in same field. Dissosteira carolina adults common at this site, but less common in Marquette County field. M. confusus adults prevalent and a few Camnula pellucida and Arphia spp. adults noted in Wood County. M. bivittatus adults scarce. (Wis. Ins. Sur.). MICHIGAN - Rapidly increasing on alfalfa; ranged 76-104 in 200 sweeps. (Janes, Aug. 5).

ALFALFA SEED CHALCID (Bruchophagus roddei) - NEVADA - Increasing in seed alfalfa fields in Lovelock, Pershing County. (Conley).

SOYBEANS

GREEN CLOVERWORM (Plathypena scabra) - MICHIGAN - Moderate increase (68) week ending July 31 at Lenawee County Blacklight station. No similar counts in soybean-growing areas as of August 5. (Janes). INDIANA - Larvae 1-4 per 5 row feet in southern districts; increased to 1-8 (average 2) per 5 row feet in central areas. Larvae mostly early instars; damage very light. (Huber). ILLINOIS - Larval average per row foot by district: Central 5.6, east 3.1, and west-southwest 3.2. (Ill. Ins. Rpt.). Killed by a fungus disease and parasitic flies. High temperatures and humidities favored spread and development of this disease; up to 30-50 percent of larvae affected. Some larvae pupated. Numbers generally lower than week ago in most areas; still high in some fields. (Ins. Sur. Bull.). WISCONSIN - Damage evident on soybeans in central area. (Wis. Ins. Sur.). MINNESOTA - Very small to 0.5 inch long on soybeans and alfalfa in southwest, south-central, and southeast districts; numbers light. (Minn. Ins. Rpt.). IOWA - Larval damage continues in north-central area; adults very abundant in central area. (Iowa Ins. Sur.). NEBRASKA - Ranged 3-11 (average 9) per 25 sweeps in 5 fields in Dodge, Washington, and Burt Counties. (Keith).

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - This species and Estigmene acrea (salt-marsh caterpillar) increasing at Yuma, Yuma County; controls may be required. (Ariz. Coop. Sur.).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - VIRGINIA - Very light in Sussex, Southampton, Nansemond, Isle of Wight, and Dinwiddie Counties. (Allen).
INDIANA - Adults 0-4 (average 1) per 5 row feet in south-central district; damage very light, less than 5 percent foliar loss, in all fields surveyed. (Huber).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - MARYLAND - Foliar loss 40 percent in 20-acre planting near Millington, Kent County. Increasing in all sections; damage light to medium. (U. Md., Ent. Dept.). NEBRASKA - Ranged 3-13 (average 5) per 25 sweeps in 5 fields in Dodge, Washington, and Burt Counties. (Keith).

GREEN STINK BUG (*Acrosternum hilare*) - MISSISSIPPI - Heavy in Scott County; treatment required. (Dinkins).

GRASSHOPPERS - VIRGINIA - Damage light on 20 acres in Nottoway County. (Allen).
MARYLAND - *Melanoplus* spp. damage light to 5 percent on 100-acre stand near Churchill, Queen Annes County. (U. Md., Ent. Dept.).

COTTON

BOLL WEEVIL (*Anthonomus grandis*) - ALABAMA - Continues general and heavy throughout southern and central areas. Controls general, widespread, and very effective. Larvae in many bolls and available squares. Increasing steadily in northern area. Some punctured square infestations up to 38-48 percent; ranged 2-25 percent in most fields. Controls more general in area. Infestation 10-26 percent in 9 fields in Morgan County; no controls applied. (Ledbetter et al.). Overwintering weevils and current brood have not developed as expected in northern area. One of higher and more general infestations in northern area found in Jackson and De Kalb Counties; total infestations usually lowest in these 2 counties. (McQueen). SOUTH CAROLINA - Populations generally increasing at Florence; larvae very heavy in untreated cotton fields. Larvae infested 0.1-54.0 percent of treated plots and 6-95 percent of untreated plots. Adults per 100 squares ranged 0.1-2.0 in treated plots and 0.5-5.0 in untreated plots. Five overwintered adults in 6 male traps; 2,848 to date. First or second generation on trap plants 52; 81 to date. (Taft et al.). TENNESSEE - Serious damage continues over regularly infested portion of cotton-growing area. Punctured squares ranged 8-95 (average 34) percent in treated and untreated fields in southern tier of counties. Abandonment of some fields partly responsible for high count. Some dead larvae in squares picked from ground, killed probably by dry weather. Less mortality where cotton rank and shades middles. (Locke). MISSISSIPPI - Remained low in most areas. Heavy in localized areas of most sections. Average percent infestation by county: Scott, 9 in 4 fields; Clay, 8 in 4; Sharkey, 8 in 30; Yazoo, 8 in 30; Hinds, 4 in 14, Washington, 2 in 10; Quitman, 3 in 65 fields. (Dinkins). Percent punctured squares averaged 5.1 (maximum 92) in 17 of 29 fields checked in delta counties; infestation over 10 percent in only 3 fields. (Primmer et al.). LOUISIANA - Weevils emerging from squares on ground past 10 days. Punctured square counts increased sharply. Weevil emergence will be more or less continuous remainder of season. Shortening of insecticide application interval to 4 or 5 days recommended. (Tynes, Aug. 2). No weevils recovered from caged traps in Madison Parish. Total of 5 weevils taken from 10 winged traps (5 males in each) and 2 from 5 winged traps (5 females in each); 3 of weevils overwintered. Percent punctured squares ranged 1-77 (average 21.3) in 131 of 132 experimental plots examined and 4-35 (average 16) in 10 fields surveyed. (Cleveland et al., Aug. 8). ARKANSAS - Infested 4,094 (57.6 percent) of fields surveyed; above treatment level in 646 fields. Total of 484 fields treated this period. (Boyer, Barnes). OKLAHOMA - Light to moderate on cotton in Beckham, Washita, Blaine, Kiowa, and Cleveland Counties. Infestation averaged 6 percent in Jackson County. Heavy on older Marshall County cotton. (Okla. Coop. Sur.). TEXAS - Populations increased sharply with heavy "hatchout" at end of reporting period in McLennan and Falls Counties. Damaging infestations found in 12 of 15 treated fields and in 8 of 10 untreated cotton fields. Percent punctured

squares ranged 5-34 (average 16.5) in treated fields and 5.5-62.4 (average 34.7) in untreated fields. (Cowan et al.). For Boll Weevil in High Plains see page 801.

BOLLWORMS (*Heliothis* spp.) - **SOUTH CAROLINA** - Numbers very high, 2,166 *H. zea* and 25 *H. virescens* taken during period in light traps at Florence; total collected to date 3,107 *H. zea* and 44 *H. virescens*. Percent larval infestations ranged 0.1-2.0 in treated plots and 0.5-5.0 in untreated plots. (Taft et al.). **TENNESSEE** - Larval damage serious throughout western area; more serious in southern portion of area. All instars were found, but were mostly small larvae; this condition indicates new "hatchout" early this week. Eggs or larvae ranged 1-16 (average 4) per 100 terminals in about 90 percent of fields surveyed. (Locke). **MISSISSIPPI** - *H. zea* and *H. virescens* generally light statewide. Flight activity light and eggs few on plants. Decreased greatly in Yazoo County. Average percent infestation by county: Scott, 6 in 4 fields; Quitman, 4 in 65; Hinds, 3 in 2; Washington, 1 in 10; Sharkey, 1 in 30 fields. (Dinkins). Percent *H. zea* damaged squares averaged 1 (maximum 9) in 21 of 29 fields in delta counties. Few eggs and larvae in squares and bolls; almost no eggs or larvae in terminals. Moths very low in light traps. Larvae medium to heavy in few fields in south delta; light in central delta. (Pfirmer et al.). **LOUISIANA** - Eggs and small larvae increased in Morehouse and Pointe Coupee Parishes and at Red River experiment station. Apparently beginning of expected increase. Moths caught in light trap at experiment station also increased. Infestations expected in all fields in State within next 7 days. (Tynes, Aug. 2). Percent *H. zea* damaged squares ranged 1-23 (average 6.7) in 125 of 132 experimental plots examined and 1-10 (average 4.9) in 10 fields surveyed in Madison Parish. Damaged bolls ranged 1-2 percent in 50 of 76 plots examined. (Cleveland et al., Aug. 8). **ARKANSAS** - Very light in State. Of larvae collected in Woodruff County, 153 determined *H. zea* and 4 *H. virescens*. *H. zea* eggs, larvae, and/or both found in 3,888 (54.6 percent) of fields surveyed. Percent damaged squares averaged less than 1 in 758 fields, 1-2 in 1,789 fields, 2-5 in 1,803 fields, 5-8 in 510 fields, and 8+ in 114 fields; no damaged squares in 2,140 fields. Total of 746 fields treated this period; 539 additional fields treated for *Anthonomus grandis* and *H. zea*. (Boyer et al.). **MISSOURI** - Larvae ranged 0-5 per 100 plants in 149 of 516 fields surveyed. (Jones). **OKLAHOMA** - *H. zea* averaged 8 per 100 terminals in Jackson County. Heavy in Pontotoc County; light to moderate in other south-central, southwest, and west-central counties. (Okla. Coop. Sur.).

TEXAS - Light in Bailey, Crosby, Dawson, Gaines, Garza, Martin, Lynn, and Terry Counties; medium in Yoakum County. (Almand, Aug. 6). Control more difficult this period as higher percentage of *H. virescens* larvae in McLennan and Falls Counties. Eggs ranged 0-9.7 (average 3) and larvae 0.5-20.9 (average 6.6) per 100 terminals in 15 treated fields; eggs 1.5-14.2 (average 3.8) and larvae 1.8-15.8 (average 8.1) per 100 terminals in 10 untreated fields. Percent damaged squares ranged 2-31.6 (average 12.2) in treated fields and 6.2-48.2 (average 16.5) in untreated fields. Percent damaged bolls ranged 2-16.5 (average 8.8) in treated fields and 6.8-33.5 (average 13.8) in untreated fields. Of larvae previously collected on cotton, 47 percent determined *H. virescens*. (Cowan et al.). **NEW MEXICO** - *H. zea* mostly light, but occasionally heavy in Chaves County; few controls applied. (Mathews).

CABBAGE LOOPER (*Trichoplusia ni*) - **SOUTH CAROLINA** - Very heavy although virus disease eliminated many populations at Florence. Total of 303 moths taken in light trap during period; total to date 799. (Taft et al.). **ALABAMA** - Heavy in many fields in Pickens and Greene Counties; lighter in Montgomery County. (Corder et al.). **MISSISSIPPI** - Noneconomic in several fields in delta counties. (Pfirmer et al.).

BEEET ARMYWORM (*Spodoptera exigua*) - **TEXAS** - Light in Cochran County. Damaging in some areas of Bailey County; up to 40 percent square damage. (Almand, Aug. 6).

COTTON LEAF PERFORATOR (*Bucculatrix thurberiella*) - **ARIZONA** - Control difficult in many fields and becoming problem from Yuma Valley to Roll in Yuma County. Increasing at Eloy, Pinal County, and Gila Bend, Maricopa County. (Ariz. Coop. Sur.).

COTTON SQUARE BORER (*Strymon melinus*) - OKLAHOMA - Moderate in Beckham and Washita Counties. (Okla. Coop. Sur.).

PLANT BUGS - ALABAMA - *Lygus lineolaris*, *Adelphocoris rapidus*, and *Psallus seriatus* continue problem in many fields in northern area, especially in Jackson, Madison, Morgan, and Colbert Counties. (Ledbetter et al.). MISSOURI - Ranged 0-27 per 100 plants in 494 of 516 fields surveyed. (Jones). ARKANSAS - Counts per 100 terminals ranged 1-19 (light) in 5,161 fields, 20-39 (medium) in 129 fields, and 40+ (heavy) in 2 fields. None found in 1,822 fields. Total of 9 fields treated this period. (Boyer, Barnes). TEXAS - *Psallus seriatus* light in Bailey, Dawson, Garza, Hale, Martin, Swisher, and Yoakum Counties. Generally light to heavy infestations ranged up to 44 percent in Floyd and Crosby Counties. (Almand, Aug. 6).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Controls required on fields not in pink bollworm spray program at Yuma, Yuma County. Averaged 40 per 100 sweeps in Maricopa and Pinal Counties and about 3 per plant at Bowie and Stewart District in Cochise County. (Ariz. Coop. Sur.). LOUISIANA - *L. lineolaris* damage has been heavy in spots, but most have left fields. (Tynes, Aug. 2.). TENNESSEE - *L. lineolaris* damage continues over western area, especially in rank cotton. (Locke).

SPIDER MITES - TENNESSEE - Damage severe over untreated western area fields. Further increase expected as weather very favorable for buildup. (Locke). ALABAMA - Mostly *Tetranychus urticae* continues problem in most central and northern areas. Infestation general and heaviest on record in Montgomery County. Damage in areas of Lawrence, Cullman, and Lee Counties; controls general. (McQueen). MISSISSIPPI - *T. urticae* buildup heavy in some north-central delta counties. Control very difficult in Tunica County. Heavy in 65 Quitman County fields. (Dinkins). Light in 5, medium in 3, and heavy in 1 of 29 fields checked in delta counties. (Pfrimmer et al.).

TOBACCO

TOBACCO FLIA BEETLE (*Epitrix hirtipennis*) - VIRGINIA - Increasing, especially on nonirrigated tobacco in Pittsylvania County. (Dominick). MARYLAND - Damage light to medium throughout southern area. (U. Md., Ent. Dept.).

GREEN PEACH APHID (*Myzus persicae*) - VIRGINIA - Noneconomic in Pittsylvania County, probably due to high temperatures, predators, and disease. (Dominick). Light to moderate in Dinwiddie County. (Allen). MARYLAND - Remains light to medium; early tobacco being cut. (U. Md., Ent. Dept.).

SUGARBEETS

BEET WEBWORM (*Loxostege sticticalis*) - KANSAS - Numbers and damage light in Grant County. (Brooks). WYOMING - Larvae averaged 2 per 100 sweeps in Big Horn, Park, and Washakie Counties. (Parshall).

NOCTUID MOTHS - COLORADO - *Spodoptera exigua* and *Ceramica picta* larvae damaged fields in some areas of lower Arkansas Valley. (Schweissing).

SAY STINK BUG (*Pitiedia ~~sevi~~*) - ARIZONA - Averaged 20 per 100 sweeps in 80 acres at Bonita, Cochise County. (Ariz. Coop. Sur.).

LYGUS BUGS (*Lygus* spp.) - WYOMING - Adults and nymphs ranged 4-26 (average 10) per 100 sweeps in Big Horn, Park, and Washakie Counties. (Parshall).

MISCELLANEOUS FIELD CROPS

SUNFLOWER MOTH (Homoeosoma electellum) - NORTH DAKOTA - Larvae of this species and Phalonia hospes averaged 2-3 per head in 50 percent of heads in sunflower field near Hunter, Cass County. (Frye, Lana). Counts per 100 heads ranged up to 160 (average 32) in Pembina County and up to 216 (average 58) in Grand Forks County; H. electellum dominant. (Kaatz).

SUNFLOWER BEETLE (Zygogramma exclamationis) - NORTH DAKOTA - Larvae per 100 heads on sunflower ranged 32-120 (average 60) in Pembina County and 0-16 (average 8) in Grand Forks County. Adults averaged less than 1 per 100 heads in same fields. (Kaatz).

POTATOES, TOMATOES, PEPPERS

EUROPEAN CORN BORER (Ostrinia nubilalis) - NEW YORK - Moths emerged from potato stalks in abandoned field in Hudson Valley. (N.Y. Wkly. Rpt., Aug. 5). NEW JERSEY - Damage light in Cumberland County pepper field. (Ins.-Dis. Newsltr.). MARYLAND - Heavy in 1.5-acre potato planting near Fairland, Prince Georges County. (U. Md., Ent. Dept.). MICHIGAN - Adults increasing at Lenawee County blacklight station; peak emergence expected next 7 days. Some egg laying; will increase next 2 weeks. Warm, moist weather will accelerate emergence. (Janes, Aug. 5).

CABBAGE LOOPER (Trichoplusia ni) - WISCONSIN - Second instars to pupae, probably this species, up to 1 per plant on potatoes in Portage County; damage less in Waushara County. (Wis. Ins. Sur.). COLORADO - Larvae 0-10 per 100 sweeps on tomatoes in Pueblo, Otero, and Prowers Counties. (Schweissing).

TOMATO FRUITWORM (Heliothis zea) - KANSAS - Very light in commercial tomato plantings in southwest area. (Brooks).

Potato Aphids in Maine - Aphis nasturtii, Myzus persicae, Macrosiphum euphorbiae, and Acyrtosiphon solani increased 2-3 times on untreated potatoes during continued dry weather in Presque Isle district; averaged less than 2 per plant (3 leaves). Continue very light on untreated late-planted potatoes in Houlton and Lee districts; numerous in some early planted fields. M. euphorbiae and A. nasturtii predominant followed by M. persicae and A. solani. (Shands et al.).

GREEN PEACH APHID (Myzus persicae) - RHODE ISLAND - Mostly alates on potatoes in Washington County. (Field). WISCONSIN - Colonies begun to increase on Waushara County peppers. (Wis. Ins. Sur.).

POTATO APHID (Macrosiphum euphorbiae) - WISCONSIN - Not serious on potatoes in Portage County; controls required earlier in commercial potato field in Marquette County. (Wis. Ins. Sur.).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - MAINE - Few adults in untreated potato field near Houlton. (Shands et al.). RHODE ISLAND - Remains problem in poorly sprayed potato fields in Washington County. (Kerr). COLORADO - Larvae 0-6 per potato plant in Weld County; damage heavy in some fields. (Johnson).

PEPPER MAGGOT (Zonosemata electa) - NEW JERSEY - Total of 140 adults trapped on 4 stickyboards at Cedarville August 1-7. (Ins.-Dis. Newsltr.).

BEANS AND PEAS

MEXICAN BEAN BEETLE (Epilachna varivestis) - MAINE - Found in scattered localities; numbers and damage serious on canning beans in Fryeburg area. Damage so severe as to decrease production in one large planting. Damage slight to negligible in other plantings although numbers increasing and more active.

(Boulanger, Aug. 6). MARYLAND - Continued heavy on unsprayed snap and bush lima beans in all sections. (U. Md., Ent. Dept.). COLORADO - Adults spotty but general (0-10 per plant) in untreated bean fields in Pueblo and Otero Counties. (Schweissing).

CABBAGE LOOPER (Trichoplusia ni) - WISCONSIN - Few bean fields treated for probably this species in Portage County; damage less in Waushara County. (Wis. Ins. Sur.).

BEAN APHID (Aphis fabae) - MARYLAND - Injury moderate on 20 percent of 5-acre bush lima bean planting near Crumpton, Queen Annes County. (U. Md., Ent. Dept.).

TARNISHED PLANT BUG (Lygus lineolaris) - NEW JERSEY - Buildup continues on beans in southern counties. (Ins.-Dis. Newsltr.).

COLE CROPS

CABBAGE LOOPER (Trichoplusia ni) - MICHIGAN - Favored by past and present warm temperatures. Largest increase at Montcalm County blacklight station; usually about 3 per week, now 9. (Jones, Aug. 5). NEW JERSEY - Adults increased in blacklight traps past week. (Ins.-Dis. Newsltr.).

IMPORTED CABBAGEWORM (Pieris rapae) - CALIFORNIA - Larvae medium on kale in Valley Ford and broccoli in Bodega, Sonoma County; very damaging to most cole crops in 1968. (Cal. Coop. Rpt.).

CUCURBITS

MELON APHID (Aphis gossypii) - MARYLAND - Continued heavy on cucurbits on Eastern Shore. (U. Md., Ent. Dept.). ALABAMA - Medium to heavy on 25 acres of water-melons in Coosa County; controls applied. (Walls, Bagby).

SQUASH BUG (Anasa tristis) - MARYLAND - Damage heavy on garden squash in Prince Georges and Anne Arundel Counties. (U. Md., Ent. Dept.). OKLAHOMA - Heavy on several cucurbits in Payne County gardens. (Okla. Coop. Sur.).

SQUASH VINE BORER (Melittia cucurbitae) - MARYLAND - Heavy killing in garden plantings statewide. (U. Md., Ent. Dept.).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - OKLAHOMA - Heavy, damaged Payne County cantaloups. (Okla. Coop. Sur.).

GENERAL VEGETABLES

ONION MAGGOT (Hylemya antiqua) - CALIFORNIA - Larvae, probably this species, heavy on onion bulbs in Sebastopol, Sonoma County. (Cal. Coop. Rpt.).

SPINACH LEAF MINER (Pegomya hyoscyami) - MAINE - Numbers and damage moderate on table beets in Jonesboro area. (Boulanger, Aug. 6).

ONION THRIPS (Thrips tabaci) - COLORADO - Up to 10 per plant on onions in north-eastern area; up to 100 per plant in Arkansas Valley. (Johnson, Schweissing).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - DELAWARE - Adults increased on vegetables in New Castle County. (Burbutis).

EUROPEAN CHAFER QUARANTINE

COUNTIES ENTIRELY COLORED ARE COMPLETELY REGULATED; COUNTIES PARTIALLY
COLORED ARE PARTIALLY REGULATED.

STATE AND FEDERAL REGULATIONS. (ERADICATION NOT IN PROGRESS OR PLANNED)

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
COOPERATING WITH AFFECTED STATES

Revised Jan. 15, 1968

SEE REVERSE SIDE FOR REQUIREMENTS CONCERNING CERTIFICATION OF REGULATED ARTICLES.

GPO 958-734

- Used mechanized soil-moving equipment is exempt ** if
cleaned and repainted.
6. Used mechanized soil-moving equipment.
Free of soil.

EUROPEAN CHAFER QUARANTINE

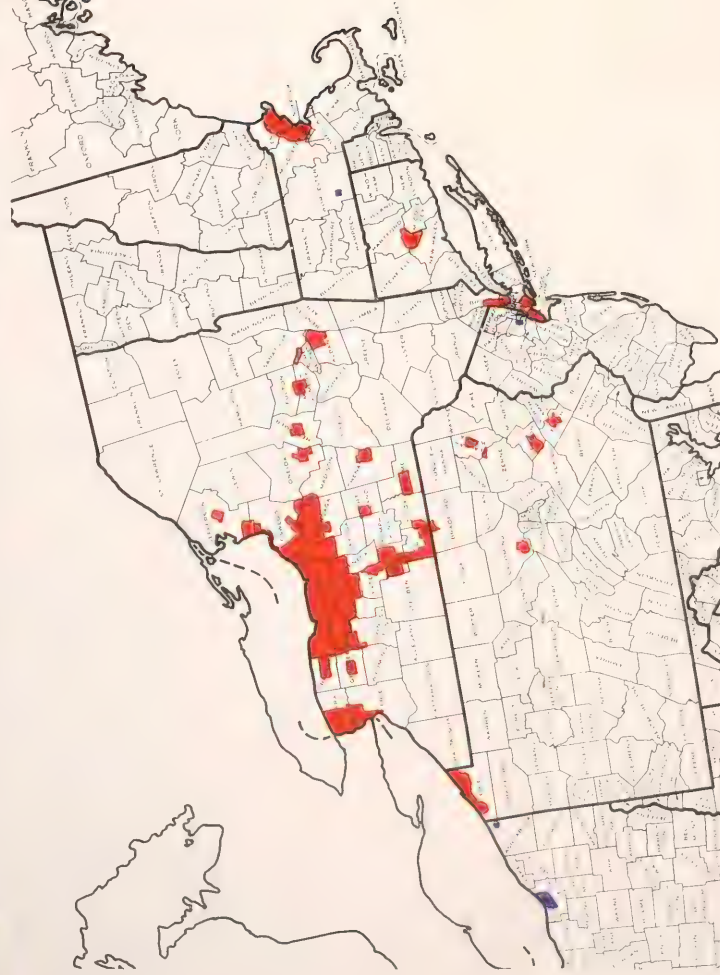
COUNTIES ENTIRELY COLORED ARE COMPLETELY REGULATED; COUNTIES PARTIALLY COLORED ARE PARTIALLY REGULATED.



STATE AND FEDERAL REGULATIONS. (ERADICATION NOT IN PROGRESS OR PLANNED)



STATE REGULATIONS ONLY. (SUPPRESSIVE TREATMENTS IN PROGRESS OR PLANNED)



RESTRICTIONS ARE IMPOSED ON MOVEMENT OF REGULATED ARTICLES FROM A REGULATED AREA AS FOLLOWS:

1. RED INTO OR THROUGH WHITE OR BLUE.
2. BLUE INTO ANY OTHER AREA WHEN REQUIRED BY APPROPRIATE STATE QUARANTINE OR BY AN AUTHORIZED INSPECTOR.

CONSULT YOUR STATE OR FEDERAL PLANT PEST CONTROL INSPECTOR OR YOUR COUNTY AGENT FOR ASSISTANCE REGARDING EXACT AREAS UNDER REGULATION AND REQUIREMENTS FOR MOVING REGULATED ARTICLES.

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THE FOLLOWING CROPS OR ARTICLES MUST BE MOVED UNDER CERTIFICATE
OR PERMIT YEAR-ROUND EXCEPT AS INDICATED

1. Soil, compost, decomposed manure, humus, muck, and peat,
separately or with other things.

Soil samples shipped to Corps of Engineers Soil Laboratories
are exempt.

Soil samples of one pound or less shipped to designated
laboratories * are exempt.

Compost, decomposed manure, humus, and peat are exempt **
if dehydrated, ground, pulverized, or compressed.

2. Plants with roots, except soil-free aquatic plants, moss, and
Lycopodium (clubmoss or ground-pine or running pine).

3. Grass sod.

4. Plant crowns and roots for propagation.

5. True bulbs, corms, rhizomes, and tubers of ornamental plants
when freshly harvested or uncured.

True bulbs, corms, rhizomes, and tubers (other than clumps
of dahlia tubers) of ornamental plants are exempt ** if

DECIDUOUS FRUITS AND NUTS

APPLE MAGGOT (*Rhagoletis pomonella*) - MAINE - Adult emergence apparently peaked July 29; male:female ratio rapidly approached 1:1 in subsequent 5 days. Emergence heavy and sustained in "seeded" cages at experimental farm in Monmouth. (Boulanger). NEW JERSEY - Adults trapped August 1-7 by county: Gloucester, 33 on 3 stickyboards; Burlington, 27 on 2 stickyboards; Mercer, 59 on 2 stickyboards. (Ins.-Dis. Newsltr.). MICHIGAN - Adult emergence expected to peak in southwest area orchards this week; peak expected in most northern stations next 2 weeks. (Janes, Aug. 5). INDIANA - Adults on bait boards decreased from 123 to 19 at Vincennes. (Dolphin, Aug. 5). WISCONSIN - Highest numbers caught July 31 to August 7 at Baraboo (98) in Sauk County. (Wis. Ins. Sur.). MINNESOTA - Adults light and still active in Lake Minnetonka areas and at Preston; controls must continue in commercial orchards. (Minn. Ins. Rpt.).

TEPHRITID FLIES (*Rhagoletis* spp.) - MICHIGAN - Adults infested 4 properties in Benzie County, 3 in Manistee County, 2 in Leelanau County, and 1 each on Oceana and Grand Traverse Counties week ending July 26. Larvae in 5 of 8 pint tart cherry samples July 22 in 40-year-old 30-acre block containing many replant trees in Jackson County. (Hanna). CALIFORNIA - *R. indifferens* larvae heavy in dooryard cherries locally in Happy Camp, Siskiyou County. This section in treatment area. (Cal. Coop. Rpt.).

CODLING MOTH (*Carpocapsa pomonella*) - INDIANA - Adult activity moderate, 38 males taken in virgin female traps at Vincennes. Most instars present; new entries still found. (Dolphin, Aug. 5). MICHIGAN - Second-brood emergence begun in Oceana County; emerging in southern area past 10-14 days. (Janes, Aug. 5).

ORIENTAL FRUIT MOTH (*Grapholitha molesta*) - ALABAMA - Recent generation cut branch tips from many peach trees in Lee County. (McQueen). OREGON - No moths taken in traps since treatment of infested orchards in the Medford area, Jackson County. (Larson).

PEACH TWIG BORER (*Anarsia lineatella*) - WASHINGTON - First of second generation found July 26 in peaches at Rick Island, Douglas County. (Anthon).

LESSER PEACH TREE BORER (*Synanthedon pictipes*) - INDIANA - Male captures increased from 136 to 216 at Vincennes; second generation emergence begun. (Dolphin, Aug. 5).

TORTRICID MOTHS (*Argyrotaenia* spp.) - INDIANA - *A. velutinana* male captures continue to increase at Vincennes orchard; 655 males taken in 30 sex lure traps (third adult flight) compared with 525 previous period. (Dolphin, Aug. 5). OREGON - *A. citrana* larvae caused much damage to apples near Salem, Marion County. (Stephenson). Current adult generation about to emerge. (Westcott).

APPLE APHID (*Aphis pomi*) - MAINE - Winged migrants moderate to heavy in many areas; young colonies developing on terminal growth. Reinfested previously treated terminal growth in Monmouth area July 30-31. (Boulanger). RHODE ISLAND - Heavy on leaves of apple sucker growth in Providence County. (Field).

BLACK PEACH APHID (*Brachycaudus persicaecola*) - CALIFORNIA - Nymphs and adults heavy on peach trees at Carlsbad, San Diego County. (Cal. Coop. Rpt.).

PEAR PSYLLA (*Psylla pyricola*) - MICHIGAN - Up to 200 eggs per pear leaf; severe damage may occur on pears unless controls applied. (Wooley, Aug. 5).

SAN JOSE SCALE (*Aspidiotus perniciosus*) - WASHINGTON - Second generation in "white cap" stage on unsprayed pears at Yakima, Yakima County, July 29. Crawler mortality heavy due to high temperatures. (Johnson).

GREEN JUNE BEETLE (*Cotinis nitida*) - OKLAHOMA - Damaged ripening peaches in Payne County. (Okla. Coop. Sur.).

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OR PERMIT YEAR-ROUND EXCEPT AS INDICATED

1. Soil, compost, decomposed manure, humus, muck, and peat, separately or with other things.

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Soil samples of one pound or less shipped to designated laboratories * are exempt.

Compost, decomposed manure, humus, and peat are exempt ** if dehydrated, ground, pulverized, or compressed.

2. Plants with roots, except soil-free aquatic plants, moss, and Lycopodium (clubmoss or ground-pine or running pine).

3. Grass sod.

4. Plant crowns and roots for propagation.

5. True bulbs, corms, rhizomes, and tubers of ornamental plants when freshly harvested or uncured.

True bulbs, corms, rhizomes, and tubers (other than clumps of dahila tubers) of ornamental plants are exempt ** if free of soil.

6. Used mechanized soil-moving equipment.

Used mechanized soil-moving equipment is exempt ** if cleaned and repainted.

- * Information as to designated laboratories may be obtained from an inspector

- ** Exempt if not exposed to infestation after cleaning or other prescribed handling.

PEAR-SLUG (*Calioa cerasi*) - CALIFORNIA - Larvae heavy in pear foliage in Bodega, Sonoma County. (Cal. Coop. Rpt.). COLORADO - Scaling surface of leaves on cherry and plum trees in Weld County. (Rothman).

EUROPEAN APPLE SAWFLY (*Hoplocampa testudinea*) - VERMONT - Damaged apples at Shoreham. (MacCollom).

EUROPEAN RED MITE (*Panonychus ulmi*) - MAINE - Continues to increase in orchard where controls deteriorating. (Boulanger, Aug. 6). NEW JERSEY - This species and or *Tetranychus urticae* generally light in most apple orchards in Atlantic, Burlington, Camden, Gloucester, and Cumberland Counties. (Ins.-Dis. Newsltr.). INDIANA - Heavy in local commercial apple orchards at Vincennes; required 1-4 treatments as of August 5. (Dolphin). WASHINGTON - Severe on 10 acres of peaches in lower Yakima Valley, Yakima County, July 21. (Anthon).

SPIDER MITES (*Tetranychus* spp.) - MICHIGAN - Appearing in some Oceana County orchards. (Jones, Aug. 3). MAINE - *T. urticae* more abundant than normal in many orchards; damage near economic level in some areas. Controls generally effective in commercial orchards. (Boulanger, Aug. 6). WASHINGTON - *T. mcdanieli* severe on cherries July 25 at Rock Island, Douglas County. (Anthon).

MITES - NEW YORK - Continue major orchard pest in Ulster County. (N.Y. Wkly. Rpt., Aug. 5). MAINE - *Aculus schlechtendali* light to moderate on apples in several areas; injury light although numerous enough to cause damage. (Boulanger, Aug. 6).

WALNUT CATERPILLAR (*Datana integerrima*) - NEW YORK - Major problem on Suffolk County walnuts. (N.Y. Wkly. Rpt.). OHIO - Defoliation severe on numerous walnut trees, up to about 80 percent of leaves consumed in Erie County. Larvae averaged 1+ inch in length and slightly over half grown. Partially defoliated walnut trees also common in central area. (Rose). WISCONSIN - Becoming third instars August 6 in southern Dane County; defoliation apparent. (Wis. Ins. Sur.). NEBRASKA - First to third instars moderate to heavy on walnut trees in eastern area. (Keith).

PECAN NUT CASEBEARER (*Acrobasis caryae*) - ALABAMA - "Drop" of small pecans light to medium in most counties, especially in southern and central areas. (Bagby et al.).

WALNUT HUSK FLY (*Rhagoletis completa*) - OREGON - First adult of season taken in traps at Portland August 1. (Anderson).

PECAN LEAFROLL MITE (*Aceria caryae*) - OKLAHOMA - Curling pecan leaves in Tulsa, Lincoln, and Okmulgee Counties. (Okla. Coop. Sur.).

CITRUS

Citrus Insect Situation in Florida - End of July - CITRUS RUST MITE (*Phyllocoptruta oleivora*) infested 78 percent of groves (norm 60 percent); 58 percent economic (norm 41 percent). Much above normal and in very high range. Further increase expected until mid-August followed by decrease extending to mid-September. Highest districts west, south, and central; east has high count on fruit but not on leaves. TEXAS CITRUS MITE (*Eutetranychus banksi*) infested 73 percent of groves (norm 68 percent); 49 percent economic (norm 42 percent). Will drop from high range by end of August and continue to decrease. Will be slightly above normal level for August. Highest districts west, central, and south. CITRUS RED MITE (*Panonychus citri*) infested 52 percent of groves (norm 65 percent); 27 percent economic (norm 37 percent). Did not attain high range as reported in error at mid-July. Remained at moderate level, much below normal for July. Decrease to low level expected. Highest district central. BLACK SCALE (*Saissetia oleae*) infested 93 percent of groves (norm 79 percent); 79 percent economic (norm 61 percent). Has started to decrease from mid-July peak which was much above normal and at very high level. Greater decrease expected after mid-August. All districts still high. GLOVER SCALE (*Lepidosaphes gloverii*) infested 63 percent of groves (norm 80 percent); 4 percent economic (norm 32 percent). PURPLE SCALE (*L. beckii*) infested 49 percent of groves (norm 71 percent); none economic (norm 8 percent). CHAFF SCALE (*Parlatoria pergandii*) infested 23 percent of groves (norm 66 percent); none economic (norm 7 percent). YELLOW SCALE (*Aonidiella citrina*) infested 67 percent of groves (norm 62 percent); none economic (norm 10 percent). AN ARMORED SCALE (*Unaspis citri*) infested 18 percent of groves; 4 percent economic. Four of 5 above armored scales below normal abundance. Moderate to heavy infestations of *L. gloverii* and/or *U. citri* will occur in scattered groves. Little change in scale situation expected in August. MEALYBUGS infested 81 percent of groves; 26 percent economic. Slightly above normal for July. Gradual decrease expected. WHITEFLIES infested 56 percent of groves; 31 percent economic. Population moderate and above July normal. Decrease expected. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

CALIFORNIA RED SCALE (*Aonidiella aurantii*) - FLORIDA - Found on Hamlin orange at Zolfo Springs, Hardee County, May 12 by R.D. Williams and V.G. Brown. This is a new Florida Department of Plant Industry county record. (Fla. Coop. Sur.).

CITRUS RUST MITE (*Phyllocoptruta oleivora*) - CALIFORNIA - Heavy, damaged grapefruit trees in Spring Valley, San Diego County. (Cal. Coop. Rpt.).

SMALL FRUITS

BRAMBLEBERRY LEAFHOPPER (*Macropsis fuscus* (Zetterstedt)) - WASHINGTON - Heavy infestation found on *Rubus* sp. at two locations on McChord Air Force Base, Pierce County, July 24, 1968. Collected and determined by S. Nakahara, Plant Quarantine Division, ARS. Confirmed by J.P. Kramer. This is a new United States record. An outbreak of this leafhopper was discovered on loganberry on Lulu Island, British Columbia, in 1952. Heavy infestations have occurred in the Lulu Island area since 1952 causing considerable damage to various brambleberries through feeding on flowers and fruit and through heavy honeydew deposits. Infestations have been difficult to control. This insect assumed a more important economic status when it was shown to be the vector of the destructive *Rubus* stunt virus of Europe in 1953. This virus is not known to occur in North America. *M. fuscus* infests *Rubus* spp. and occurs in several countries of Europe as well as in British Columbia, Canada. The insect overwinters in the egg stage in canes of wild and cultivated *Rubus* spp. Eggs hatch in late May in British Columbia, about the time loganberries begin to blossom. Nymphs are numerous by mid-June. There are 5 instars, each stage requiring about 10 days. Adults appear in midsummer. There is apparently only one generation a year. In the Netherlands, the virus is spread from old to new berry plantations by adults. For additional details see CEIR 9 (12): 209-210. (PPC).

A GEOMETRID MOTH (Coryphista meadii) - CALIFORNIA - Larvae medium; damaged blueberry leaves at Santa Rosa, Sonoma County. (Cal. Coop. Rpt.).

RASPBERRY CANE MAGGOT (Pegomya rubivora) - MAINE - Numbers and damage moderate at East Madison; first report of species in several years. (Boulanger, Aug. 6).

GRAPE ERINEUM MITE (Eriophyes vitis) - CALIFORNIA - Medium on grape leaves at Sonoma, Sonoma County. (Cal. Coop. Rpt.).

ORNAMENTALS

ARBORVITAE LEAF MINER (Argyresthia thuiella) - MAINE - Substantial injury above 1967 levels in Cumberland County. (Boulanger, Aug. 6).

LILAC LEAF MINER (Gracillaria syringella) - MAINE - Injury level above that of 1967 in Cumberland County. (Boulanger, Aug. 6).

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus) - OHIO - Heavy in block of 500 arborvitae plants in Lucas County; controls recommended. (Jones).

YELLOW SCALE (Aonidiella citrina) - FLORIDA - Found on bird-of-paradise at St. Cloud, Osceola County, June 11 for a new Florida Department of Plant Industry host record. (Fla. Coop. Sur.).

A SLUG (Arion ater) - WASHINGTON - Severe on property at Pullman, Whitman County; apparently present past 3 years. This is a new county record. First record of establishment east of Cascade Mountains in State. Damage to ornamentals, particularly petunias, expected. (Harwood, Getzin, Aug. 2).

FOREST AND SHADE TREES

DOUGLAS-FIR TWIG WEEVIL (Cylindrocopturus furnissi) - WASHINGTON - Mostly adults severely damaged Christmas tree farms August 1 at Shelton, Mason County; killed trees under 2.5 feet and leaders and twigs on commercial size trees. Progressively heavier in recent years. (Saunders).

WHITE-PINE WEEVIL (Pissodes strobi) - OHIO - Pupae in wilted terminals in damaged natural stand of white pine in Lake County. Wilted terminals on leaders of about 25 percent of trees; typical symptoms on tree leaders up to 50 feet above ground. (Campbell).

FLATHEADED FIR BORER (Melanophila drummondii) - OREGON - Adults extremely numerous at various localities throughout State (from sea level to 7,000+ feet) last 3 weeks. Most abundant on Douglas-fir logs around lumberyards and cleared areas. (Westcott).

PINE COLASPIS (Colaspis pini) - MISSISSIPPI - Heavily damaged needles of young pines in approximately 20 acres of Montgomery County. (Dinkins). OKLAHOMA - Averaged 5 per tree on 5-foot pines in McCurtain County. (Okla. Coop. Sur.).

CONIFER SAWFLIES (Neodiprion spp.) - MINNESOTA - N. lecontei mostly in second instar with some third in northern Pine County. Survey negative on State Highway 23 from Sandstone to Duluth and on U.S. Highway 61 from Hinckley to Duluth. (Minn. Ins. Rpt.). WISCONSIN - Nearly full-grown N. pinetum larvae common on white pine 8 feet tall in Sheboygan County August 1. (Wis. Ins. Sur.).

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - OKLAHOMA - Third-generation adults emerging from pines checked in McCurtain County. (Okla. Coop. Sur.).

ZIMMERMAN PINE MOTH (Dioryctria zimmermani) - MINNESOTA - In spruce at Lake City, Wabasha County. Emergence of moths already begun. (Minn. Ins. Rpt.).

COOLEY SPRUCE GALL APHID (Adelges cooleyi) - IOWA - On blue spruce at Maquoketa, Jackson County, and at Dubuque, Dubuque County. Problem appears widespread. Emerged July 17. (Iowa Ins. Inf.).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - NEW MEXICO - Light to heavy, damaged mugho pine at Albuquerque, Bernalillo County; killed some very heavily infested branches. (Heninger). OHIO - Hatch in progress; first-generation crawlers dispersing on Scotch pine in Lake County August 6. (Campbell).

AN APHID (Eulachnus agilis) - OHIO - Numbers on Scotch pine much lower than in 1967 in northeastern area. (Campbell).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - OREGON - Newly emerged adults from dead elm at Lakeview, Lake County; larvae and pupae in bark. Entire trunk riddled with emergence holes. This is a new county record. (Goeden, Westcott).

ASIATIC OAK WEEVIL (Cyrtepidomus castaneus) - ALABAMA - Adults heavy around buildings in localized area of Birmingham, Jefferson County; no damage reported. Previously reported from Cleburne and Lee Counties. Jefferson County is a new county record. (Granberry).

ELM LEAF BEETLE (Pyrrhalta luteola) - ARIZONA - Heavy on elms at Sedona, Coconino County. (Rover). COLORADO - Larvae feeding heavily on Chinese elms in Weld County. (Rothman). MAINE - Heavy with damage at Fryeburg, Oxford County. (Boulanger, Aug. 6). RHODE ISLAND - Heavy; defoliated Washington County elms. (Jackson, Field).

ALDER FLEA BEETLE (Altica ambiens) - WASHINGTON - Heavier than usual in 1968; serious damage July 29 near Davenport, Lincoln County. (Brown). OREGON - Adults, but mostly larvae feeding heavily on alder at various locations along crest of Cascade Mountains. (Goeden, Westcott).

A LEAF BEETLE (Phytodecta pallida) - MINNESOTA - Larvae and adults numerous on poplar and willow in nurseries at Minneapolis, St. Paul, and further south. (Minn. Ins. Rpt.).

A BUPRESTID BEETLE (Brachys ovatus) - MAINE - Moderate to heavy damage to Cumberland County oaks; problem common in that area. (Boulanger, Aug. 6).

CERAMBYCID BEETLES - NEW YORK - Elaphidionoides villosus major problem on Suffolk County oaks. (N.Y. Wkly. Rpt., Aug. 5). VERMONT - E. villosus caused heavy drop of twigs on ornamental oaks at Burlington, Chittenden County. (MacCollom). MAINE - Megacyllene robiniae damage common in Cumberland County; serious in large plantings of young and older trees at Cumberland. (Boulanger, Aug. 6).

MIMOSA WEBWORM (Homadaula anisocentra) - OKLAHOMA - Damaged 25 percent of leaves on a tree at Stillwater, Payne County, for a new county record. Leaf damage up to 5 percent in several locations at Chouteau, Mayes County. (Okla. Coop. Sur.). MISSOURI - Larvae heavy in southeast area. (Munson). IOWA - Found on Moraine and Sunburst locust at Atlantic, Cass County, for a new county record. (Iowa Ins. Sur.). INDIANA - Damage to honeylocust more widespread than for several years statewide. Heaviest damage, up to 60 percent browned foliage, in southern areas. (Huber). NEW JERSEY - Common on mimosa in central and southern counties. (Ins.-Dis. Newsltr.).

FALL WEBWORM (Hyphantria cunea) - OHIO - Webbing more evident on roadside wild cherry in central area as larval feeding progressed July 28. (Hanson). Damage and webbing widespread on various deciduous trees as populations increase. (Rose). ILLINOIS - Defoliated certain trees, especially birch, ash, and elm. (Ins. Sur. Bull.). WISCONSIN - Second instars common on trees and shrubs in south-central areas from Rock and Walworth Counties to southern Marquette County. (Wis. Ins. Sur.).

BAGWORM (*Thyridopteryx ephemeraeformis*) - MARYLAND - Continued to defoliate in all areas. Heavy numbers defoliated several large clumps of willow, locust, and sweet-gum along Baltimore and Washington Parkway between Laurel and Greenbelt in Prince Georges County. Continues most common pest of ornamentals. (U. Md., Ent. Dept.).

WHITE-MARKED TUSSOCK MOTH (*Homocampa leucostigma*) - MINNESOTA - Larvae damaged linden trees at Minneapolis and St. Paul; readily controlled with various insecticides. Late reports indicate cocoons fairly common on bark of elms at south Minneapolis. (Minn. Ins. Rpt.).

CATALPA SPHINX (*Ceratomia catalpae*) - OHIO - Early instars beginning to feed on catalpa foliage in Delaware County (Hanson) and probably elsewhere in State (Rose).

ELM LEAF APHID (*Myzocallis ulmifolii*) - OKLAHOMA - Averaged 20 per leaf on elm checked in Payne County; moderate to heavy in Cleveland and Blaine Counties. (Okla. Coop. Sur.).

MAN AND ANIMALS

MOSQUITOES - NEVADA - *Culex pipiens quinquefasciatus* and *C. tarsalis* larvae light to heavy at Las Vegas, Clark County. (Hicks). UTAH - Very troublesome in many farm areas and communities of western and eastern Millard County and in Manti and Ephraim areas of Sanpete County. (Knowlton). MINNESOTA - Continued high in light traps July 27 to August 2 with over 28,000 females; about 87 percent *Aedes vexans*. *Mansonia perturbans* declined from high of previous 2 weeks. *A. vexans* 80+ percent of total bite collections. Scattered but generally heavy brood resulted from heavy August 6 rains; adults will emerge about August 15-16. Densities especially high in this brood due to very large numbers of eggs laid by females of previous broods. Hot, humid nights with little wind made annoyance especially acute. (Minn. Ins. Rpt.). WISCONSIN - Hot weather accelerated activity and development. With increased outdoor activities of humans, biting severe except in few areas in central and northern counties. *A. vexans* no longer dominant. *A. sticticus* as common as *A. vexans*; *A. sticticus* predominant in some areas. *Psorophora ciliata* in black-tight trap near Mazomanie. Annoyance moderate to severe to cattle in many areas. (Wis. Ins. Sur.). MICHIGAN - Continue very annoying; decreasing due to drier weather. (Jones, Aug. 5). CONNECTICUT - Most irritating pests of past few weeks. (Savos, July 31). RHODE ISLAND - *Culex* spp. and *Aedes* spp. numerous throughout State. (Field). MAINE - Very troublesome in many areas this year; much annoyance during July from *M. perturbans* which has been especially abundant. (Boulanger).

SCREW-WORM (*Cochliomyia hominivorax*) - Total of 163 cases reported in U.S. July 28 to August 3 as follows: TEXAS - Atascosa 18, Bee 2, Bexar 1, Brewster 3, Brooks 26, Coke 1, Concho 1, De Witt 1, Duval 1, Edwards 2, Frio 1, Gonzales 2, Guadalupe 1, Hidalgo 1, Irion 1, Jim Hogg 2, Jim Wells 3, Karnes 8, Kenedy 11, Kinney 1, Kleberg 9, La Salle 1, Live Oak 7, Mason 2, McMullen 1, Medina 2, Nueces 1, Pecos 10, Refugio 1, San Patricio 1, Starr 8, Terrell 9, Uvalde 1, Val Verde 4, Victoria 1, Webb 1, Willacy 4, Wilson 5; ARIZONA - Greenlee 2, Maricopa 1, Mohave 1, Pima 1, Pinal 1; NEW MEXICO - Hidalgo 2. Total of 452 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Territorio sur de Baja California 48, Sonora 79, Chihuahua 65, Coahuila 131, Nuevo Leon 70, Tamaulipas 59. Total of 70 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 52,220,000; New Mexico 1,580,000; Arizona 8,920,000; California 100,000; Mexico 33,908,000. (Anim. Health Div.).

FACE FLY (*Musca autumnalis*) - OREGON - Very light, averaged less than one per face, near Dairy and Klamath Marsh; up to 6 per face near Fort Klamath, Klamath County. This is a new county record. (Goeden). UTAH - Collected July 12 at Payson, Utah County, for a new county record. Det. by W.J. Hanson. (Knowlton). SOUTH DAKOTA -

Remained low, 0-4 per face, on untreated herds surveyed in northern Yankton, Clay, Hutchinson, Turner, and Lincoln Counties; higher, 0-6 per face, on untreated cattle south of Geddes, Charles Mix County. (Balsbaugh et al.). NORTH DAKOTA - Up to 4 (average less than one) per face on beef herds in Nelson, Ramsey, McHenry, and Rolette Counties for new county records. Up to 30 (average 10) per face on beef herds in Richland and Ransom Counties. Economic only in sandhills area of Richland and Ransom Counties in 1968. (Brandvik). MISSOURI - Averaged 5.2, 3.8, 13.8, 2.3, 12.1, 4.7, and 1.6 per cow (10-cow counts) on 7 herds in central area. (Thomas). ILLINOIS - Average per face by district: Southeast 7, west 5, southwest 18, northwest 9, and west-southwest 40. (Ill. Ins. Rpt.). INDIANA - Annoyance moderate to severe on pastured cattle throughout State; favored by recent heavy showers and humid conditions. (Huber). WISCONSIN - Continued moderately annoying in all areas. (Wis. Ins. Sur.). MICHIGAN - Annoying southern area cattle. (Shinkle, Aug. 5). VERMONT - Heavy throughout State. (MacCollom). MAINE - Increasing with much annoyance to dairy cattle; up to 20 per face in southern area July 29. (Boulanger).

HOUSE FLY (*Musca domestica*) - VERMONT - Heavy throughout State. (MacCollom). WISCONSIN - Numbers and activity increased noticeably. Becoming household pest as far north as Vilas County. Population varies greatly in cattle barns depending on control, but general increase apparent. (Wis. Ins. Sur.).

HORN FLY (*Haematobia irritans*) - MISSISSIPPI - Average per head by county: Jefferson 10, Hinds 20, and Yazoo 1,500 (untreated). (Dinkins). OKLAHOMA - Averaged 225 per head on cows and yearlings and 500 per head on bulls in Payne and Noble Counties. Heavy on livestock in Mayes and Ottawa Counties; moderate in Craig and Cleveland Counties. (Okla. Coop. Sur.). MISSOURI - Averaged 410.0, 355.0, 387.5, 143.5, 399.0, 0.5, and 232.5 per cow (10-cow counts) on 7 central area herds. (Thomas). ILLINOIS - Average per head by district: Southeast 406, west 72, southwest 152, northwest 205, and west-southwest 185. (Ill. Ins. Rpt.). WISCONSIN - Continued moderately annoying in all areas. (Wis. Ins. Sur.). SOUTH DAKOTA - Heavy, 150-350 per side, on cattle in northern Yankton and Clay Counties. (Jones, Kantack, Aug. 2). Currently moderate to high on untreated cattle herd south of Geddes, Charles Mix County; 20-700 (average 175) per side on cows. Averaged 250 per side on cattle checked in Hutchinson, Turner, and Lincoln Counties. (Alleman, Kantack). NEBRASKA - Ranged 300-350 per side on 4 herds pastured near Lincoln, Lancaster County. (Campbell). UTAH - Ranged 35-200 per head in some herds near Parowan and Paragonah and up Parowan Canyon, Iron County. (Knowlton, Aug. 1).

STABLE FLY (*Stomoxys calcitrans*) - INDIANA - Annoyance moderate to severe on pastured cattle throughout State; favored by recent heavy showers and humid conditions. (Huber). ILLINOIS - Average per head by district: Southeast 4, west 3, southwest 22, northwest 0, and west-southwest 34. (Ill. Ins. Rpt.). WISCONSIN - Numerous and annoying cattle severely in Calumet, Columbia, Clark, and Jefferson Counties; annoyance moderate in most other sections. (Wis. Ins. Sur.). NEBRASKA - Heavy, 25-30 per leg, on 3 dairy and 5 feedlot herds. (Campbell).

TABANID FLIES - UTAH - Troubled campers and picnickers in Cedar Canyon and in meadows near Cedar Brakes, Iron County, and Duck Creek, Kane County. Annoyed horses at Springville and Spanish Fork, Utah County, and at Centerville and Kaysville, Davis County. *Chrysops* sp. annoyed horses and humans at Delta Reservoir and Deseret and Oasis areas of Millard County. (Knowlton, Aug. 1). OKLAHOMA - Average per head in Payne and Noble Counties: *Tabanus abactor* 2, *T. lineola* complex 3, and *T. sulcifrons* 0.5; *T. atratus* 1 per 10 head. *Tabanus* spp. ranged 3-10 per head in Ottawa County. Heavy in Bryan County, moderate in Craig County, and light in Mayes County. (Okla. Coop. Sur.). WISCONSIN - *Chrysops* spp. continued numerous near marshes and woods; numbers or biting did not increase. Annoyed cattle and humans. (Wis. Ins. Sur.). RHODE ISLAND - Many *Chrysops* spp. adults annoying throughout State. (Field).

SNIPE FLIES (*Symphoromyia* spp.) - UTAH - In Iron County: Numerous in Parowan Canyon; more numerous and annoying in meadows on range around Cedar Brakes

National Monument; much more numerous and troublesome in Cedar Canyon. (Knowlton, Aug. 1).

BROWN RECLUSE SPIDER (*Loxosceles reclusa*) - OKLAHOMA - Several infestations in Ottawa County homes. (Okla. Coop. Sur.).

MISCELLANEOUS WILD PLANTS

MOTTLED RUSTIC (*Caradrina morpheus* (Hufnagel)) - WASHINGTON - Specimens of this noctuid moth collected in light traps operated by Plant Quarantine Division, ARS; 2 specimens collected at Blaine, Whatcomb County, July 21, 1966, by C.A. Leckie and determined by S. Nakahara; total of 5 specimens collected at McChord Air Force Base, Pierce County, June 14 and 20, 1967, by D.M. Pike and determined by W.R. Baurer and S. Nakahara, respectively. Confirmed by E.L. Todd. This is a new United States record. Report not released earlier because of taxonomic questions. *C. morpheus* is a European species that feeds on various low plants including goosefoot, knotweed, and dandelion. This noctuid moth known to occur in eastern and western Canada. Common over most of England but occurs less frequently in the northern part and in Wales, Ireland, and Scotland. Little is known concerning economic importance. The larva is brownish or grayish brown to ochreous on the back; the central line is whitish, with broken edging of brown; there is a series of blackish arrowhead markings on each side of the central line; spiracles blackish; head dark brown and very glossy. Adult forewings pale brown; stigmata dark brown or blackish, generally distinct; hind wings whitish, tinged with smoky on the veins. Larvae feed from August through the fall. Moths fly from June to August; there may be a second flight in October. (PPC).

A WEEVIL (*Cosmobaris americana*) - OREGON - Adults on *Chenopodium* sp. in Baker County July 25. This is a new county record. (Goeden, Westcott).

STORED PRODUCTS

A POWDER-POST BEETLE (*Minthea rugicollis*) - VIRGINIA - Adults collected from stacks of cured Banaks lumber in Augusta County June 6, 1968. Lumber shipped from South America. Det. by T.J. Spilman. (Coffey). Previously recorded in United States from Florida and reported in CEIR 18(32):772. (PPC).

BENEFICIAL INSECTS

LADY BEETLES - WYOMING - Adults per 100 sweeps averaged 13 on alfalfa in north-central area and 6 in sugarbeet fields in Park, Big Horn, and Washakie Counties. (Parshall). ARIZONA - *Rodolia cardinalis* eliminated *Icerya purchasi* (cottony-cushion scale) from citrus grove on west side of Salt River Valley. Built up from few specimens released several weeks ago in Maricopa County. (Ariz. Coop. Sur.).

DAMSEL BUGS (*Nabis* spp.) - WYOMING - Adults averaged 48 per 100 sweeps on north-central area alfalfa. (Parshall). UTAH - *N. alternatus* unusually numerous, 2-11 per 10 sweeps, in alfalfa field at Hinckley; this and other species 5-12 per 10 sweeps in alfalfa at Sinks near Deseret, Millard County. Sprays decreased predators in many western Millard County alfalfa seed fields. (Knowlton, Aug. 1).

A BIG-EYED BUG (*Geocoris punctipes*) - ARKANSAS - Principal species in alfalfa on university farm; ranged 150-200 per 100 sweeps, 90+ percent nymphs. (Boyer).

GREEN LACEWINGS (*Chrysopa* spp.) - ARIZONA - Averaged 50 per 100 sweeps on Pinal County alfalfa. (Ariz. Coop. Sur.).

BENEFICIAL INSECTS - NEW MEXICO - Counts per 25 sweeps on alfalfa in eastern Valencia County: Lady beetles 5-10, damsel bugs 4-12, green lacewings 0-4, and syrphid flies 0-8. (Heninger).

HONEY BEE (*Apis mellifera*) - UTAH - Had to be fed following late June frost in eastern Millard County; frost damage extensive on seed alfalfa. (Knowlton, Aug. 1).

A PHYTOSEIID MITE (*Zetzellia mali*) - WASHINGTON - Averaged 5-10 per leaf on young apple trees at Moxee, Yakima County. (Johnson, Aug. 2).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BOLL WEEVIL (*Anthonomus grandis*) - TEXAS - In High Plains area, medium to heavy with punctured squares 10-40 percent in Mitchell County outside control zone. Inside the control zone - Infestations averaged 10 percent in southeastern Garza County; punctured squares 25-30 percent in 2 fields. Detected in 25 of 35 fields in Kent County; economic in 3 fields. Infested 34 of 35 fields in Dickens County; generally increasing, damage economic in one field. Infested about half of fields surveyed in Howard County outside control zone; generally light but damage 51 percent in one field. (Almand, Aug. 6). For Boll Weevil in other areas see page 789.

CARIBBEAN FRUIT FLY (*Anastrepha suspensa*) - FLORIDA - Remains about constant with many adults trapped in central and southern areas. Guavas and mangoes most common fruits infested past week. Found on fig for a new Florida Department of Plant Industry host record. (Krieter).

GRASS BUGS - UTAH - *Labops hesperius* moderate, lightly marking grasses in meadows above 10,000 feet near Cedar Brakes, Iron County. (Knowlton, Aug. 1).

GRASSHOPPERS - NEW MEXICO - Infested 6-8 thousand acres of rangeland east of Las Vegas, San Miguel County; ranged 10-20 per square yard on about 3,000 acres. First, third, and fourth instars and adults present. (Mathews). **COLORADO** - *Melanoplus femurrubrum*, *M. differentialis*, and *M. bivittatus* heavily damaged potatoes at Gilcrest, Weld County; ranged 15-20 per square yard on borders. (Johnson). **UTAH** - Very numerous in meadows around Beaver, Beaver County; damaged some western Millard County grain fields. Control needed at Pahvant. (Knowlton, Aug. 1). **OREGON** - Up to 5 per square yard in alfalfa field near Aurora, Marion County. (Westcott). **WASHINGTON** - *M. sanguinipes* (75 percent adults) 15-20 per square yard on pasture and range at Chelan and Entiat, Chelan County. (Parkman, Aug. 2). **SOUTH DAKOTA** - Moderate, 20-25 per square yard, on roadsides and field margins in Lincoln County. *M. femurrubrum* and other *Melanoplus* spp. mostly third to fourth instar. (Kantack). **NORTH DAKOTA** - Adult survey completed in Cass, Richland, Ransom, and Sargent Counties. Cropland infestations noneconomic in all areas, but light in parts of southern Cass and northeastern Ransom Counties. Field counts in some alfalfa and soil bank fields up to 20 (average 5) per square yard; marginal counts up to 30 (average 5). *M. bivittatus*, *M. sanguinipes*, and *M. femurrubrum* dominant. Noneconomic on rangeland in most of Richland and Ransom Counties except for several small scattered isolated areas with up to 10 (average 2) per square yard (light) and in small area of northeastern section. *M. sanguinipes* and *M. bivittatus* dominant. (Toczek, Grasser).

GYPSY MOTH (*Porthetria dispar*) - NEW YORK - Pupae and adults noted in Suffolk County. (N.Y. Wkly. Rpt., Aug. 5). **RHODE ISLAND** - Two males taken at Kingston, Washington County. (Benham). **MAINE** - Stripping common at Conway. Moving toward Fryeburg, Oxford County; reaching major proportions. Moderate to heavy at Unionville, Washington County; heavy damaged oaks and then moved into and damaged blueberry fields. (Boulanger, Aug. 6).

JAPANESE BEETLE (*Popillia japonica*) - INDIANA - Adults averaged 5-6 per ear on 25 percent of plants in first 4 border rows of 10-acre cornfield near South Bend, St. Joseph County. (Porter). **MARYLAND** - Damaged 4 percent of 30-acre sweet corn

planting near Queen Anne, Queen Annes County. (U. Md., Ent. Dept.). OHIO - Adult activity near seasonal peak. (Rose). NEW YORK - Five beetles per 100 silks on field corn August 1 at Hurley, Ulster County. (N.Y. Wkly. Rpt., Aug. 5). CONNEC-TICUT - Abundant in scattered locations on shrubs, flowers, and vegetables. (Savos, July 31).

PINK BOLLWORM (*Pectinophora gossypiella*) - CALIFORNIA - Intensive detection continued. Collected 6 sterile moths but no field moths to date. Released 415,050 sterile moths this week. Percent infestation increased slightly in Imperial and Bard Valleys, Imperial County, and in Palo Verde Valley, Riverside County. (Cal. Coop. Rpt.). ARIZONA - "Hot spots" in many cotton fields at Safford, Graham County. (Ariz. Coop. Sur.).

WHITE-FRINGED BEETLES (*Graphognathus* spp.) - ARKANSAS - Adults emerging during surveys begun in July. Extension of infested area at Blytheville Air Force Base in Mississippi County; larvae damaged strawberry beds at Leachville. Found in western section of Little Rock, Pulaski County, August 5, 1968, for a new county record and the first record in central area of State. (Owen). TENNESSEE - Found in Rhea County August 5, 1968, for a new county record. (St. Cloud).

HAWAII INSECT REPORT

New State Record - Nymphs and adults of a RHOPALID BUG (*Jadera haematoloma*) numerous on balloon vine (*Cardiospermum halicacabum*) in vacant lot in industrial section near Honolulu International Airport on Oahu August 5, 1968, by W. Au. Adults in weeds adjacent to domestic arrival area in airport. Det. by P.D. Ashlock. (Au). Occurs in southern continental United States from Florida to California (PPC).

General Vegetables - BEAN FLY (*Melanagromyza phaseoli*) heavily damaged 2 to 3-week-old snap beans at Waiahole and Waimanalo, Oahu; plants destroyed by growers. Spray operations intensified in other bean fields to prevent egg laying. Heavy in backyard snap bean seedlings at Wahiawa, Oahu. (Yamamoto, Sato). LEAF MINER FLIES (*Liriomyza* spp.) and CARMINE SPIDER MITE (*Tetranychus telarius*) heavily infested many snap bean, cucumber, and tomato fields throughout Oahu, especially in Waianae district. (Yamamoto). SOUTHERN GREEN STINK BUG (*Nezara viridula*) nymphs and adults unusually numerous on weeds in Kula, Maui, at 2,900 feet elevation; continued migration to adjacent cultivated areas. (Takishita).

Fruits - NEW GUINEA SUGARCANE WEEVIL (*Rhabdoscelus obscurus*) larvae and adults medium on 6 coconut trees at Lahaina, Maui; larvae in base of leaf-stems. (Miyahira). RED-BANDED THRIPS (*Selenothrips rubrocinctus*) nymphs and adults generally medium on guava foliage and fruits at Waimanalo, Oahu. Heavily scarred many wild and commercial fruits. (Funasaki).

Ornamentals - Nymphs and adults of a PLATASPID BUG (*Coptosoma xanthogramma*) light on flowers of Rhodesian wisteria (*Bolusanthus speciosus*) at Kaneohe, Oahu. This is a new host record. Thousands of adults resting on sea grape, rubber tree, hibiscus, and other plants at Poipu, Kauai. (Kumabe, Sugawa).

Man and Animals - MOSQUITOES - Caught 107 *Aedes vexans nocturnus* and 3,325 *Culex pipiens quinquefasciatus* in 48 light traps on Oahu in July. *A. vexans nocturnus* low in all areas; *C. pipiens quinquefasciatus* highest at Haleiwa, Waiāluā, and Waipahu. (Mosq. Cont. Br., Dept. of Health).

Beneficial Insects - Adults of a DUNG BEETLE (*Pachylister caffer*) medium in cow dung at Haiku, Maui; introduced from Southern Rhodesia in 1957 to control horn fly. (Ah Sam).

INSECT DETECTION

New United States Records

BRAMBLEBERRY LEAFHOPPER (Macropsis fuscata (Zetterstedt)) - WASHINGTON - On Rubus sp. at McChord Air Force Base, Pierce County, July 24, 1968. Collected and det. by S. Nakahara. Confirmed by J.P. Kramer. (p. 795).

MOTTLED RUSTIC (Caradrina morpheus (Hufnagel)) - WASHINGTON - Collected in light traps at Blaine, Whatcomb County, July 21, 1966, by C.A. Leckie. Det. by S. Nakahara. (p. 800).

New State Records

AN ARMORED SCALE (Chortinaspis subchortina) - ARIZONA - Collected on St. Augustine grass at Phoenix, Maricopa County, November 13, 1967, by P. Min. Det. by R.F. Wilkey, confirmed by L.M. Russell and H. McKenzie. (p. 785).

A RHOPALID BUG (Jadera haematoloma) - HAWAII - Nymphs and adults on Cardiospermum halicacabum at Honolulu International Airport on Oahu. Collected by W. Au August 5, 1968. Det. by P.D. Ashlock. (p. 802).

New County Records

WESTERN CORN ROOTWORM (Diabrotica virgifera) - ILLINOIS - Kankakee and La Salle Counties. (p. 784).

ALFALFA WEEVIL (Hypera postica) - WISCONSIN - Dane, Milwaukee, and Green Counties. (pp. 785-786).

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) - MISSOURI - Scott County. (p. 786). ALABAMA - Jefferson County. (p. 797).

MEADOW SPITTLEBUG (Philaenus spumarius) - MISSOURI - Scott County. (p. 787).

CALIFORNIA RED SCALE (Aonidiella aurantii) - FLORIDA - Hardee County. (p. 795).

A SLUG (Arion ater) - WASHINGTON - Whitman County. (p. 796).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - OREGON - Lake County. (p. 797).

MIMOSA WEBWORM (Homadula anisocentra) - OKLAHOMA - Payne County. IOWA - Cass County. (p. 797).

FACE FLY (Musca autumnalis) - OREGON - Klamath County. UTAH - Utah County. (p. 798). NORTH DAKOTA - Nelson, Ramsey, McHenry, and Rolette Counties. (p. 799).

MOTTLED RUSTIC (Caradrina morpheus) - WASHINGTON - Pierce County. (p. 800).

A WEEVIL (Cosmobaris americana) - OREGON - Baker County. (p. 800).

WHITE-FRINGED BEETLES (Graphognathus spp.) - ARKANSAS - Pulaski County. TENNESSEE - Rhea County. (p. 802).

LIGHT TRAP COLLECTIONS

State	County	Section	Tract	Area	Acres	Owner	Notes	Remarks
FLORIDA	Jefferson	8-1-7	2BL	24	7			
KANSAS	Hiawatha	8/3	BL	7				
	Peabottom	8-4-6	BL	81	1			
	Wichita	8/6	BL	2				
MINNESOTA	Crookston	7-31-8-7		19				
	Fergus Falls	7-31-8-7						
	Shakopee	7/31-8/7		9				
	Worthington	7/31-8/7						
MISSISSIPPI	Stonewall	8/2-9	2BL	2	1			
MISSOURI	Portageville	8-3-9		2				
NEW JERSEY	Aura	8/1-7	BL	3				
	Yvesboro	8/1-7	BL	1				
	Seabrook	8/1-7	BL	6				
	Seabrook	8/1-7	EL	40				
NORTH DAKOTA	Bowman	8/4						
	Fargo	8/7						
	Hazleton	8/6		1				
OHIO	Hilliards	1-7	BL	30				
	Wooster	8/1-7	EL	22				
SOUTH DAKOTA	Brookings	8-3-7	BL	2				
TEXAS	Brownsville	8/3-9	2BL	10	1			
	Waco	8/3-9	none					
WISCONSIN	Madison	8/1-6	BL		26			

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
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Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG continues to cause concern on sorghum in most States reporting; parasites and predators effective in some spots. (p. 807).

CORN EARWORM heavy across peanut belt of Georgia and in corn in eastern Nebraska; moths very heavy in Yakima County, Washington. (pp. 807-808). CORN LEAF APHID heaviest on field and sweet corn in 20 years throughout Pennsylvania; numerous on sorghum in areas of Wyoming and California. POTATO LEAFHOPPER potentially economic on alfalfa in Ohio. (p. 808).

EUROPEAN CORN BORER heavy on sweet corn in Dade County, Georgia, and on corn throughout Maryland; flights heavy in Ohio and southern Delaware. SOUTHWESTERN CORN BORER heavy on corn in Marion County, Alabama, and in northeast Arkansas; much damage expected on late-planted grain sorghum in southern Arizona. (p. 809).

GREEN CLOVERWORM economic on soybeans in southern Minnesota; defoliation severe in many cases. (p. 813).

BOLL WEEVIL damage continues serious in western Tennessee; numbers continue heavy in central and southern Alabama. (p. 814). BOLLWORMS heavy throughout Georgia; damage serious throughout western Tennessee. (p. 815). SPIDER MITE damage heaviest ever seen in western Tennessee. (p. 816).

EUROPEAN RED MITE buildup major concern in some orchards in western New York. (p. 819).

SPRUCE BUDWORM may require control in 1969 in northern Minnesota. (p. 821). MIMOSA WEBWORM numbers and damage heavy over much of Ohio; also heavy in certain areas of other States. (p. 822).

Total of 220 SCREW-WORM cases reported in southwest U.S. August 4-10. FACE FLY extremely annoying to beef cattle in northern Georgia; heavier than usual in Greene County, Tennessee (p. 823). HORN FLY and STABLE FLY annoying cattle throughout Wisconsin (p. 824).

Detection

Single specimen of a GELECHIID MOTH taken in light trap in California. This species not known to occur in the United States. (p. 826).

New State records include an APHID in Utah (p. 818), a BARK BEETLE in Missouri (p. 821), and a CADDISFLY in Hawaii (p. 827).

For new county records see page 826.

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WEATHER BUREAU'S 30-DAY OUTLOOK

MID-AUGUST TO MID-SEPTEMBER

The Weather Bureau's 30-day outlook is for temperatures to average below normal over the Northeast, the northern border States, and most of the country west of the Continental Divide. Above normal temperatures will prevail over the Southeast, while near normal temperatures are expected elsewhere in unspecified areas. Precipitation will total above normal over the southern Rockies and most of the Plateau, the Pacific Northwest coast, and the Midwest. Subnormal amounts are expected in southern California, New England, and the Southeast, while near normal rainfall is in prospect elsewhere.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D. C. 20250. Price \$5.00 a year.

WEATHER OF THE WEEK ENDING AUGUST 19

HIGHLIGHTS: Light rains began in the Pacific Northwest. Violent weather struck the central Great Plains. The Southeast continued hot and humid.

PRECIPITATION: Light rains fell early in the week in the hot humid air mass that lay over the Deep South; also in the western mountains. On Tuesday evening steady rain began in the Pacific Northwest bringing a welcome interruption to the dry season and lessening the forest fire hazard in that area. Violent weather occurred Wednesday afternoon and evening in the central Great Plains with 5 to 9 inches drenching spots in eastern Colorado. Eads, Colorado, received 6.15 inches in 4 hours, flooding many homes. Other heavy thunderstorms occurred from Nebraska to northern Texas and in the Ohio River Valley. Many of the thunderstorms were accompanied by strong winds and hail. As thunderstorms continued in the tropical air that covered the South and along the front that separated this air mass from

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

GREENBUG (*Schizaphis graminum* (In broad sense))* - TEXAS - Heavy; continued to damage grain sorghum in southern area and High Plains. Damaged many fields in Garza and Motley Counties. Much control applied. (Commer, Pallmeyer). OKLAHOMA - Ranged up to 1,500 per leaf in scattered sorghum fields in Roger Mills and Washita Counties; up to 600 per leaf in Beckham County. Moderate on sorghum in Caddo and Marshall Counties. Ranged 0-70 per leaf in fields in Kingfisher, Major, and Dewey Counties. Light in volunteer wheat in eastern Harper and western Woodward Counties. Lady beetle larvae up to 15 per leaf in heavily infested fields. Very heavy numbers in Panhandle decreasing; large scale operations decreasing. (Okla. Coop. Sur.). KANSAS - Heavily infested sorghum fields July 24 found free of live aphids August 12 in Jefferson County; many parasitized aphids found. No live aphids in previously infested sorghum in Atchison, Doniphan, Brown, and Jackson Counties; parasitized aphids in all fields. Predator activity increased in Finney County, but not widespread in western area. (Simpson). NEBRASKA - No live aphids in 3 grain sorghum fields in Gage and Pawnee Counties; mummies numerous. (Keith). Decreasing rapidly in untreated fields near North Platte, Lincoln County; ranged 65-250 per leaf. Lady beetles averaged about 2 per plant. (Staetz). COLORADO - Increasing to 0-500 per plant on sorghum in Washington and Yuma Counties; ranged 500-2,000 per plant in Kit Carson County. Heavy on sorghum in Arkansas Valley; controls in progress. (Johnson, Schweissing). WYOMING - Ranged 2-100 per sorghum plant in Goshen County. Small red patches on leaves where aphids feeding. Less than 2 per leaf on 3 corn plants in Platte County field. More general July 26 to August 2, but apparently declined since in cornfields. Parasites and predators increased in sorghum and controlling this aphid. (Parshall). ARIZONA - Continues to damage grain sorghum in Cochise, Graham, Pima, and Pinal Counties. (Ariz. Coop. Sur.).

ARMYWORM (*Pseudaletia unipuncta*) - MARYLAND - Averaged 15 per night in blacklight trap collections at Centreville. (U. Md., Ent. Dept.). GEORGIA - Heavy on browntop millet in Gwinnett County. (Shackelford). WISCONSIN - Few old larvae feeding on late field corn in Fond du Lac County. (Wis. Ins. Sur.).

BEEF LEAFHOPPER (*Circulifer tenellus*) - UTAH - Curly top killed 40-95 percent of tomato plants and 40 percent of beans at Sugarbeet, Millard County. (Knowlton, Aug. 6). WYOMING - Curly top symptoms in sugarbeet field near Wheatland, Platte County; no leafhoppers present. (Parshall).

CORN EARWORM (*Heliothis zea*) - NEW YORK - First moth of season August 7 in trap at Hurley; none taken at Poughkeepsie. Heavy on unsprayed and poorly sprayed sweet corn in Suffolk County. (N.Y. Wkly. Rpt., Aug. 12). NEW JERSEY - Adults low in blacklight traps statewide. Anticipated buildup not occurred yet. (Ins.-Dis. Newsltr.). MARYLAND - First adults of season taken at Centreville blacklight trap; averaged 1 per night. Extremely light to date. Below normal infestations expected on all late-season crops. Decline attributed to heavy spring rains during May and June. (U. Md., Ent. Dept.). SOUTH CAROLINA - Increasing on soybeans in some counties, especially in coastal area. Larvae consumed almost every bloom in one soybean field in Beaufort County. (Thomas, Aug. 13). Heavy enough to justify control in 2 of 10 soybean fields in Horry County. Heavy in soybeans on farm in Barnwell County. (Nettles, Aug. 13). GEORGIA - Heavy across peanut belt. Extremely heavy, "ragging" soybean foliage in Tift County. (French, Aug. 9). Currently heavy in peanuts in Tattnall County and in soybeans in Dooly County. (Johnston, Fulford). ARKANSAS - Larvae occasionally in semitight heads in Clay, Craighead, Greene, Mississippi, and Randolph Counties. (Boyer). WISCONSIN - Earlier threat to sweet corn than expected. High blacklight trap catches of 5 August 15 at Cobb, Iowa County, and of 3 August 13 at Arlington, Columbia County. Nearly identical catches at these 2 separate locations may indicate that the same situation exists in much of the sweet corn growing acreage in area. Sweet corn protection required now. (Wis. Ins. Sur.). NEBRASKA -

* According to recent taxonomic studies by L.M. Russell. The aphid on sorghum appears to be this species.

Generally heavy in 22 cornfields surveyed in east and southeast crop districts; second instar to full-grown larvae 1-3 per ear on 10-65 percent of ears. About 5 percent left ears to pupate. (Keith, Berberet). NORTH DAKOTA - Full-grown larvae damaging tassels on 50 percent of sweet corn plants near Hunter, Cass County. (Brandvik). WASHINGTON - Very heavy at Wapato, Yakima County; averaged 191 moths per night July 30 to August 5 in light trap. Light trap catches indicate populations about double that of 1967. (Shipman). ARIZONA - Larvae 2-4 per head in many grain sorghum fields in Graham County. (Ariz. Coop. Sur.).

CORN LEAF APHID (*Rhopalosiphum maidis*) - MARYLAND - Continues to increase statewide. (U. Md., Ent. Dept.). PENNSYLVANIA - Heaviest infestations on field and sweet corn in 20 years statewide. Heavy on 20-50 percent of stalks in many fields. Few fields with honeydew on most leaves. (Gesell, Aug. 7). MICHIGAN - Increased on field corn beginning to tassel past week, but decreased on all corn already tasseled. *Empusa* fungus principal control factor as few aphids in some fields that tasseled about 3 weeks ago. Up to 90 percent of aphids infected on individual corn plants. (Jones, Aug. 12). ILLINOIS - Alates migrating from infested fields as soon as dry-silk stage reached. Very numerous in whorls of late corn. Problem generally disappearing. (Ins. Sur. Bull.). WISCONSIN - Colonies decreased, but still prevalent in whorls of pretasseling corn. Treatment anticipated in Lake Winnebago area. Lady beetles numerous in field corn. (Wis. Ins. Sur.). OKLAHOMA - Ranged 0-50 per terminal in most sorghum in Dewey, Roger Mills, Washita, and Kingfisher Counties. Ranged 400-600 per terminal in a few west-central area fields. Averaged 50 per tassel in corn in Custer County. (Okla. Coop. Sur.). NEW MEXICO - Light to moderate in cornfields near Roswell, Chaves County. (Mathews). COLORADO - Light to moderate on sorghum in eastern area; noneconomic on corn and sorghum. (Johnson). WYOMING - Up to 1,500 per plant on Goshen and Platte County corn; ranged 25-1,000 per sorghum plant in Goshen County. Predators and parasites increasing in corn and sorghum. (Parshall). UTAH - Several hundred acres of heavily infested spring barley recently sprayed in western Millard County. (Knowlton, July 23). CALIFORNIA - Heavy on sorghum in Clarksburg, Yolo County. (Cal. Coop. Rpt.).

PICKLEWORM (*Diaphania nitidalis*) - GEORGIA - Heavy on summer squash in Spalding County. (Dupree, Aug. 9). SOUTH CAROLINA - Light on cantaloups at Clemson. (Nettles, Aug. 13).

POTATO LEAFHOPPER (*Empoasca fabae*) - MARYLAND - Severe yellowing and stunting on 1 acre of research snap beans near Fairland, Prince Georges County. Ranged up to 19-28 per sweep in alfalfa near Buckeystown and Woodsboro, Frederick County. Generally decreasing on alfalfa statewide. (U. Md., Ent. Dept.). OHIO - Continues potentially economic on alfalfa; little yellowing noted. (Rose). INDIANA - Remains light, ranged 3-7 per sweep on 6 to 10-inch third-growth alfalfa and 1-4 per row foot on soybeans in northern districts. (Huber). WISCONSIN - Relatively light in alfalfa in east-central area, but heavier in central sand area. Averaged 5 per 10 sweeps further east; about 10 per sweep in central area. (Wis. Ins. Sur.). MISSOURI - Averaged 160 per 10 sweeps in alfalfa field in Greene County. (Munson).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - INDIANA - No buildup in light soil areas of northern section due to abundant moisture. Ranged 1-3 per sweep in alfalfa throughout these areas. (Huber). SOUTH DAKOTA - Damaging numbers in alfalfa field east of Yankton, Yankton County. (Calkins). WYOMING - Averaged 11 per 100 sweeps in second-growth alfalfa field near Hawk Springs, Goshen County. (Parshall). OKLAHOMA - Counts per 10 sweeps averaged 3,000 in Hammond area and 125 in Cheyenne area, Roger Mills County, and 5 in Major County. Moderate to heavy in Washita County. (Okla. Coop. Sur.). TEXAS - Heavy, 12-15 per stem, in alfalfa field at Barstow, Ward County. (Neeb). UTAH - Rapidly spread throughout general alfalfa-growing areas of western Millard County; ranged 5-1,000+ per 10 sweeps. Control varied from good to poor. Some harvested hay seriously discolored. (Knowlton, Aug. 6).

TOBACCO BUDWORM (Heliothis virescens) - CALIFORNIA - Larvae heavy on petunia plants in Oroville, Butte County. (Cal. Coop. Rpt.).

TOMATO HORNWORM (Manduca quinquemaculata) - UTAH - Serious pest of tomato and potato foliage at Sutherland, Delta, and Sugarville, Millard County, this summer. (Knowlton, Aug. 6). WASHINGTON - Developing larvae destroying 5 percent of foliage in home gardens in Yakima area, Yakima County. (Landis).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - NEW YORK - Moths conspicuous; 6 per night at Poughkeepsie trap. Emergence from caged first brood continued. Mostly first and second instars light on treated and untreated whorls. (N.Y. Wkly. Rpt., Aug. 12). DELAWARE - Adult flights continue heavy at Sussex County blacklight traps. (Burbutis). MARYLAND - Continues heavy on corn statewide. Adults averaged 87 per night at blacklight trap near Centerville, Queen Annes County. Second-generation larvae and damage in all sections; first instars 1-8 per plant in Frederick County. (U. Md., Ent. Dept.). GEORGIA - Heavy on sweet corn in Dade County. (Adams). OHIO - Moths high in light traps, indicates second-generation larvae may be heavier than normal in 1968. (Rose). INDIANA - Second-generation ear infestations ranged 4-32 percent on corn in northern districts; heaviest in Kankakee River area. Larvae 1-4 (average 1) per infested ear. (Huber). MICHIGAN - Emergence peaked August 6 in Lenawee County. Weekly total 211 adults (male:female ratio 112:99); far below second-brood levels for 1967. Caught 15 in blacklight collections for same period in Montcalm County. Continuous emergence expected remainder of August. (Janes). ILLINOIS - Still problem to canning companies processing sweet corn; egg masses up to 100 per 100 stalks in midseason to late plantings. Second-generation borers expected in late corn in many areas of State. (Ins. Sur. Bull.). WISCONSIN - Numbers above normal. Infested about 12 percent of corn; very few larvae reached ears. Mostly second instars, indicates eggs laid near end of second first-generation flight. Second-generation moths will probably lay eggs on late sweet corn and smaller field corn. Second generation expected in east-central area at Janesville, Mazomanie, Westfield, Berlin, and Horicon. Further infestations along Lake Michigan will depend on migration from out-of-State areas. (Wis. Ins. Sur.). MINNESOTA - Larvae per 100 plants averaged 26.4 in southwest district and 22.7 in west-central district; 90 percent fifth instars and 5 percent pupae in southwest district and 50 percent fourth instars and 3 percent pupae in west-central district. (Minn. Ins. Rpt.). NEBRASKA - Second-brood second to fifth instars on 5-15 percent of plants in 22 fields checked in east and southeast areas. (Keith). ARKANSAS - Present in all cornfields checked in northeast area; 1-2 larvae per plant in 15-20 percent of plants. (Boyer).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - ALABAMA - Larvae heavy in late corn in Marion County. Larvae of this and Spodoptera frugiperda caused 10-15 percent of stalks to fall in late field in Hale County; first girdling noted in this county. (Price et al.). ARKANSAS - Heavy in northeast area. Most corn late due to adverse weather at normal planting time. Infested 50+ percent of corn in roasting-ear stage in Clay and Greene Counties. Larval feeding in lower part of plants will result in heavy lodging. Pupae numerous; another generation expected. (Boyer). ARIZONA - Increasing in grain sorghum in Maricopa and Pinal Counties; much damage expected in late-planted fields. (Ariz. Coop. Sur.).

SOUTHERN CORNSTALK BORER (Diatraea crambidoides) - MARYLAND - Damaged 14 percent of 50-acre corn planting near Grasonville, Queen Annes County. (U. Md., Ent. Dept.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ALABAMA - Damage continues very heavy in 2 large sorghum plantings in Perry County; second planting in one field almost destroyed. (Hairston et al.). GEORGIA - Heavy on corn in Fayette County. (Varner).

FALL ARMYWORM (*Spodoptera frugiperda*) - GEORGIA - Numbers spotty to general in sorghum and millet in Oconee and Greene Counties. (Jordan). SOUTH CAROLINA - Damaging milo in Clarendon County; first report of season. (Thomas, Aug. 13). MARYLAND - Damaged 2 percent of field corn stand near Frederick, Frederick County. (U. Md., Ent. Dept.). ILLINOIS - Evident in very late-planted corn in whorl or very early tassel stage. (Ins. Sur. Bull.).

SORGHUM WEBWORM (*Celama sorghiella*) - TEXAS - Heavy on sorghum in Brazos River bottom in Burleson County. (Teetes). ARKANSAS - Found in Clay, Craighead, Greene, Mississippi, and Randolph Counties. Infested few semitight heads. Up to 15-20 larvae in heads, but not numerous enough to justify treatment. (Boyer).

WESTERN BEAN CUTWORM (*Loxagrotis albicosta*) - NEBRASKA - Larvae found August 14 in corn ear near Trumbull, Clay County, for new county record. (Woolsey). Plant infestations ranged 20-50 percent in 2 fields in Merrick and Hamilton Counties; larvae third and fourth instars. (Short, Luedke).

CORN ROOTWORMS (*Diabrotica* spp.) - NEBRASKA - *D. longicornis*, *D. undecimpunctata howardi*, and *D. virgifera* adult surveys indicate rather light populations in east and southeast crop districts. Ranged from less than 1 to 8 (average 2-3) per plant in most of 63 fields surveyed. (Keith et al.). Averaged 2-3 per plant in 6 fields surveyed in Lincoln County. (Staetz). SOUTH DAKOTA - *D. virgifera* adults continued to increase in cornfields near Beresford, Lincoln County; averaged 5 per stalk. Adults averaged 3 per stalk in research field in northern Yankton County. *D. longicornis* very light in all fields surveyed. (Jones). WYOMING - *D. virgifera* adults 0-22 (average 6) per corn plant in Platte and Goshen Counties. (Parshall). MINNESOTA - Adult emergence should peak next 7 days. Feeding on silks, tassels, and pollen in axils of leaves. Generally light, 5-9 per plant, in Carver, Steele, Mower, McLeod, and Olmsted Counties. Mostly *D. longicornis*; *D. virgifera* in few fields in Lyon, McLeod, and Carver Counties. (Minn. Ins. Rpt.). ILLINOIS - Readily found in many cornfields throughout State; heaviest in west, northwest, and northeast sections. Averaged up to 10 per plant in central and eastern areas. (Ins. Sur. Bull.). MARYLAND - *D. undecimpunctata howardi* adults averaged 1 per corn plant in Frederick and Washington Counties. (U. Md., Ent. Dept.).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - MARYLAND - Adults taken in blacklight trap near Beltsville, Prince Georges County, by J. Hellman August 16; found feeding on corn silks near Leitersburg, Washington County, by W.C. Harding August 13. Det. by W.C. Harding. These are new county records. (U. Md., Ent. Dept.). OHIO - Adults near seasonal peak on corn silks in central area; up to 6 per silk in Franklin, Madison, and Fairfield Counties. (Rose). INDIANA - Adults very light on corn silks in northern areas; ranged 15-30 per 25 ears in most heavily infested fields. (Huber). ILLINOIS - Adults averaged 1 per 6 plants (maximum 2.5 per plant) in survey of 30 fields in west-southwest district. Maximum percent pupation by district: West, 40 July 22; northwest, 78.2 August 7; northeast, 17.4 July 15-16. (Ill. Ins. Rpt.). WISCONSIN - Peak emergence over as evidenced by numerous adults. Adults up to 20 per silk, silk feeding extensive in some corn. Pollination over in most cases, but adults up to 2-3 per silk on some Rock County sweet corn. Adults scarce in sandy central area; 3 per silk in field near Cedar Grove, Sheboygan County. Adults 80 and 100 percent of population at 2 sites, pupae 70 and 72 percent at 2 other sites in Rock County August 13; mostly adults and pupae at fifth site. (Wis. Ins. Sur.).

CORN FLEA BEETLES (*Chaetocnema* spp.) - MARYLAND - *C. pulicaria* damage very evident in central area corn; numbers and damage continue to increase in central counties. (U. Md., Ent. Dept.). ARIZONA - *C. ectypa* continues to injure grain sorghum in Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

SAP BEETLES - OHIO - Adults and larvae damaged some sweet corn in Scioto County August 8. Larvae ranged from none to several per ear. Small larvae had eaten small holes in kernels causing them to brown. (Mowbray). MARYLAND - *Carpophilus lugubris* buildup continues in sweet corn statewide. Infested 40 percent of 12-acre stand on Kent Island, Queen Annes County. (U. Md., Ent. Dept.).

SORGHUM MIDGE (*Contarinia sorghicola*) - ARKANSAS - Very light in Clay, Craighead, Greene, Mississippi, and Randolph Counties; only in late-blooming low places in fields. In general, crops survived without damage. (Boyer). TEXAS - Infested late sorghum in spotted areas of Rolling Plains, South Plains, and Trans-Pecos areas. Infested blooming grain sorghum in isolated fields at Belding, Pecos County. (Commer et al.).

FALSE CHINCH BUG (*Nysius ericae*) - TEXAS - Medium to very heavy on grain sorghum in Knox and Garza Counties; some activity in Glasscock County. Controls applied. (Collier et al.). NEW MEXICO - Damage severe to grain sorghum field in southern Eddy County. (Ballard).

BANKS GRASS MITE (*Oligonychus pratensis*) - TEXAS - Light to heavy on grain sorghum in El Paso, Pecos, and Reeves Counties; on Johnson grass in Pecos County. Very heavy in one field at Belding, Pecos County; sorghum heads webbed. Controls applied in Pecos and Reeves Counties. (Texas Coop. Rpt.).

SMALL GRAINS

HESSIAN FLY (*Mayetiola destructor*) - ILLINOIS - Populations this year and in 1965 lightest in past 13 years. Average puparia per 100 tillers by district: West 1, central 0, east 0, west-southwest 2, east-southeast 4, southwest 2, and southeast 2. State average 2. (Ill. Ins. Rpt.). MISSOURI - Remains quite low over most of State; could be problem this fall in localized areas or in individual fields in southwestern, east-central, and northeastern counties. (Munson).

RICE STALK BORER (*Chilo plejadellus*) - TEXAS - Eggs and first and second instars heavy on Jackson County rice. (Wilson).

RICE STINK BUG (*Oebalus pugnax*) - ARKANSAS - Above treatment level, 10 per 100 heads, on heading ricefield in Lincoln County; controls applied. (Boyer).

TURF, PASTURES, RANGELAND

TWO-LINED SPITTLEBUG (*Prosapia bicincta*) - SOUTH CAROLINA - Adults unusually numerous in Clemson area. Yellowing appearing and heavy damage imminent. (Nettles, Aug. 6). Damaged 3 acres of Coastal Bermuda grass. Det. by L. Allen. (Donkle et al., Aug. 6).

LYGAEID BUGS - PENNSYLVANIA - *Blissus hirtus* moderate to heavy in lawns of housing development in Venango County; problem past few years. (Adams, Aug. 7). NEVADA - *Nysius* sp. migrating from vacant lots and rangelands into yards and buildings in Washoe and Douglas Counties. (Gallaway).

SOD WEBWORMS - TENNESSEE - Very active in lawns in Greenville area, Greene County. (Cunningham). RHODE ISLAND - *Crambus* sp. adults active in Kent and Washington Counties. (Field, Kerr).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - DELAWARE - Adults very common in grass and in Canada and bull thistle flower heads in New Castle County. (Burbutis).

GRASSHOPPERS - ILLINOIS - Abundant in some roadsides, ditches, fencerows, and grass waterways. Some migration into corn, soybeans, and hay. (Ins. Sur. Bull.).

FORAGE LEGUMES

GREEN CLOVERWORM (*Plathypena scabra*) - MARYLAND - Larvae 6-12 per 10 sweeps in 60 acres of alfalfa near Vienna and Rhodesdale, Dorchester County; increasing throughout Eastern Shore area. (U. Md., Ent. Dept.). INDIANA - Larvae ranged from 1 per 5 sweeps to 4 per sweep on alfalfa in northern districts; about 25 percent of larvae parasitized. (Huber). WISCONSIN - Half to full-grown larvae very common on east-central area alfalfa; most fields averaged 3-4 per sweep. Higher than normal in northeast area. (Wis. Ins. Sur.).

BEEF ARMYWORM (*Spodoptera exigua*) - ARIZONA - Continues serious problem in alfalfa in Yuma County. (Ariz. Coop. Sur.).

WEBWORMS (*Loxostege* spp.) - MISSOURI - Larvae moderate in alfalfa in Gentry County. (Peters). OKLAHOMA - Damage moderate to mung beans in Garfield County. (Okla. Coop. Sur.).

ALFALFA CATERPILLAR (*Colias eurytheme*) - WYOMING - Larvae averaged 19 per 100 sweeps on Platte and Goshen County alfalfa. (Parshall). MARYLAND - Larvae 4-8 per 10 sweeps in 60 acres of alfalfa near Vienna and Rhodesdale, Dorchester County. (U. Md., Ent. Dept.).

ALFALFA WEEVIL (*Hypera postica*) - MICHIGAN - Adult counts in 6 fields indicate sharp decline over last week. Ranged 12-38 per 200 sweeps in 2 counties August 9. Migrating from host fields. Return to fields expected in October and early November. Second and third instars 12-40 per 200 sweeps. (Janes). NORTH DAKOTA - Full-grown larvae 1 per 100 sweeps on second-crop alfalfa in Oliver County. (Brandvik). WYOMING - Larvae averaged 11 and adults 5 per 100 sweeps in second-growth alfalfa in Platte and Goshen Counties; about 80 percent of second-growth alfalfa harvested. (Parshall).

ASIATIC OAK WEEVIL (*Cyrtopistomus castaneus*) - MISSOURI - Adults taken on red clover in Laclede and Texas Counties for new county records. (Munson).

BLACK BLISTER BEETLE (*Epicauta pennsylvanica*) - WYOMING - Adults averaged 117 per 100 sweeps in 2 alfalfa fields in Platte County. (Parshall). WISCONSIN - First found on alfalfa in Dodge County; very scarce to date. (Wis. Ins. Sur.).

SOUTHERN CORN ROOTWORM (*Diabrotica undecimpunctata howardi*) - NORTH DAKOTA - Adults 2 per 100 sweeps on irrigated alfalfa in McKenzie County for a new county record. (Brandvik).

ALFALFA PLANT BUG (*Adelphocoris lineolatus*) - WYOMING - Adults and nymphs averaged 24 per 100 sweeps on Platte and Goshen County alfalfa. (Parshall). INDIANA - Plant bug populations, mostly this species, at season's low in alfalfa in northern area; adults and nymphs ranged from 2 per 5 sweeps to 3 per sweep. (Huber).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Counts per 100 sweeps in alfalfa averaged 200 in Yuma County and 300 in Pinal County. (Ariz. Coop. Sur.). WYOMING - Adults and nymphs 38-180 (average 114) on Platte and Goshen County alfalfa. (Parshall).

GARDEN FLEAHOPPER (*Halticus bracteatus*) - MISSOURI - High, 200-550 per 10 sweeps, in southwest area alfalfa; discoloration noted in one field. (Munson).

PEA APHID (*Acyrtosiphon pisum*) - WYOMING - Increasing slowly in second-crop alfalfa in Platte and Goshen Counties; ranged 250-1,400 (average 750) per 100 sweeps. (Parshall).

CLOVER LEAFHOPPER (*Aceratagallia sanguinolenta*) - MARYLAND - Averaged 20 per sweep on 3 acres of alfalfa near Centreville, Queen Annes County. (U. Md., Ent. Dept.).

ALFALFA SEED CHALCID (*Bruchophagus roddi*) - NEVADA - Very heavy in abandoned alfalfa in Lander County. (Aten).

SOYBEANS

GREEN CLOVERWORM (Plathypena scabra) - SOUTH CAROLINA - Increased in few counties in Savannah River area as of August 6. Some damage noted in most counties as of August 13; no controls applied. (Thomas). ALABAMA - Light, 1-2 per 3 row feet, in most fields in Greene and Hale Counties; very little leaf damage. (Johnson et al.). INDIANA - Increased past 3 weeks in northern and central areas. Defoliation up to 10-15 percent in most heavily infested fields, but numbers well below economic levels. Larvae ranged from 1 per 5 row feet to 3 per row foot throughout northern half of State; heaviest in northwest district. (Huber). ILLINOIS - Continues to decrease; fungus disease statewide and effective in control. (Ins. Sur. Bull.). MISSOURI - Ranged 1-3 per row foot over much of soybean-growing area from southwest to northeast sections. Much "ragging" of top leaves. Moths numerous around lights during period. (Munson). IOWA - Larvae decreased in north-central area; 7 per row foot highest count. (Iowa Ins. Sur.). MINNESOTA - Economic, 6+ larvae per foot in many southwest, south-central, and southeast counties; ranged 2-30 per row foot. Most problems in southern 2 tiers of counties. Mostly early instars; damage mainly on top of plants. Defoliation severe in many cases. (Minn. Ins. Rpt.).

CABBAGE LOOPER (Trichoplusia ni) - NORTH CAROLINA - Light to moderate in south-eastern area; leaf damage very light to light. (Johnson). SOUTH CAROLINA - Unusually large increase in few counties in Coastal Plains. (Thomas, Aug. 6). ALABAMA - Larvae scattered in fields in Greene and Hale Counties. (Johnson et al.). Larvae light to moderate in several southeast counties. (Bond et al.).

BEET ARMYWORM (Spodoptera exigua) - SOUTH CAROLINA - Outbreak in Charleston County; controls applied. (Thomas, Aug. 6).

BEAN LEAF BEETLE (Cerotoma trifurcata) - ALABAMA - Adults very heavy, destroying 25-35 percent of leaves of 24 to 40-inch soybeans on several hundred acres (3 farms) in Greene County. Adults averaged 20-25 per 3 row feet. (Johnson et al.). Very light in many other fields in Greene and Hale Counties. (Glass et al.). Light to heavy and widespread throughout Marengo County. (Yates). Also light to heavy in Sumter County; heaviest in old pasture sod fields. (Bond et al.). MISSOURI - Ranged 1-3 per row foot over much of soybean-growing area from southwest to northeast sections. Much "ragging" of top leaves. (Munson).

MEXICAN BEAN BEETLE (Epilachna varivestis) - NORTH CAROLINA - Secondary population buildup light to moderate in southeastern area. (Johnson). SOUTH CAROLINA - Damage increased in most counties in Coastal Plains and sand hill sections of State as of August 6. Increasing statewide as of August 13; much lighter in most fields than in past years. (Thomas). ALABAMA - No specimens collected in 15-20 fields examined in Greene, Hale, and Sumter Counties; previously very heavy in State. Very heavy in field in Monroe County; controls expected. (Bond et al.).

STINK BUGS - MISSOURI - Moving into soybeans, especially in west-central and southwestern counties. Ranged 0.5-2 per yard of row in marginal 8-16 rows and 0-0.5 per yard of row in interiors of most fields. Nezara viridula predominant, all stages noted. (Munson). ALABAMA - Occasional adults of N. viridula and Euschistus servus noted in fields in Greene and Hale Counties. Some controls applied in Washington County. (Estes).

SPIDER MITES - DELAWARE - Infestations still conspicuous in many fields. (Boys, Aug. 15). NEW JERSEY - Tetranychus spp. building up rapidly; damaging plants in several Mercer County fields. (Ins.-Dis. Newsltr.).

PEANUTS

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - GEORGIA - Light to heavy in Tift, Calhoun, Lee, and Irwin Counties. (French, Aug. 9). TEXAS - Medium to heavy in late-planted peanuts near Hempstead, Waller County; fed on pegs and pods 50 to 60 days old. (Richardson). ARIZONA - Damaging peanuts on Yuma Mesa, Yuma County. (Ariz. Coop. Sur.).

GRANULATE CUTWORM (*Feltia subterranea*) - GEORGIA - Light to moderate across peanut belt. (French, Aug. 9).

SPIDER MITES - GEORGIA - Heavy in some fields in Tift, Early, and Miller Counties. (Ratcliffe et al., Aug. 9). ALABAMA - *Tetranychus urticae* extremely damaging in 20-acre field in Geneva County; field harvested early. (Smith, Bond).

COTTON

BOLL WEEVIL (*Anthonomus grandis*) - SOUTH CAROLINA - Migration underway in State. Severely damaged untreated plants. (Sparks, Aug. 6). Increased in poorly treated plots. Larvae infested 0.1-50.3 percent of treated plots and 46.5-83.5 percent of untreated plots at Florence. Adults per 100 squares ranged 0-0.3 in treated plots and 1.5-26 in untreated plots. Overwintered adults in 6 male traps 18; 2,856 to date. First to third generation on trap plants 83; 164 to date. (Taft et al., Aug. 9). GEORGIA - Very heavy in southern area; migrating as of August 9. Currently light to heavy over State. (French, Womack). TENNESSEE - Serious damage continues over regularly infested area of western section. Migration to north begun from "cut-out" fields. First and second generation present in infested area. Much small boll damage noted since squares becoming scarce. Buildup favored by showers over area. Punctured squares ranged 10-95 percent; almost all squares punctured in some fields. (Locke). ALABAMA - Continues heavy in central and southern areas; adults emerging from opening bolls. Egg laying heavy; 1-25 punctures in half-grown bolls where young weevils plentiful and squares present. Punctured squares increasing steadily in northern area. Controls widespread in many northern areas, but not in all cotton-producing communities. (McQueen). MISSISSIPPI - Infestations increased in many fields in south delta area. Numerous rains hampered treatment and favored increased infestation. Average percent infestations by county: Chickasaw, 10 in 12 fields; Clay, 9 in 3; Yazoo, 9 in 30; Coahoma, 4 in 15; Leflore, 5 in 12; Tallahatchie, 6 in 10; Quitman, 5 in 27; Tate, 5 in 38; Issaquena, 3 in 28; Holmes, 7 in 18; Sharkey, 8 in 30 fields. (Dinkins). Percent punctured squares averaged 3.8 (maximum 39) in 8 of 25 fields checked in delta counties. (Pfrimmer et al.).

LOUISIANA - Total of 26 weevils taken in caged traps during male attractant test in Madison Parish; 68.2 percent of collection males. No overwintered weevils taken. Total weevils to date 2,577. Percent punctured squares ranged 3-35 (average 14.6) in all 112 experimental plots examined and 5-53 (average 16.9) in 12 fields surveyed. (Cleveland et al., Aug. 15). ARKANSAS - Infested 4,086 (68.8 percent) of fields surveyed; above treatment level in 1,086 fields (low). Total of 793 fields treated this period. (Boyer, Barnes). MISSOURI - Infested 26 of 496 fields checked; 5 fields treated. (Jones). OKLAHOMA - Damaged squares ranged 5-15 percent in Marshall County and averaged 5 percent in Major County. Moderate in Bryan County and light in Caddo County. (Okla. Coop. Sur.). TEXAS - Decreased in McLennan and Falls Counties. Damaging infestations found in 7 of 16 treated fields and 3 of 5 untreated fields. Percent punctured squares ranged 5.6-61.0 (average 12.2) in treated fields and 6.5-41.2 (average 22.4) in untreated fields. Squares scarce in most fields. (Cowan et al.).

BOLLWORMS (*Heliothis* spp.) - SOUTH CAROLINA - Larvae infested 0-10.5 percent of treated plots and 11.5-21.0 percent of untreated plots at Florence. Light trap catches much lighter. *H. zea* 513 and *H. virescens* 6 in light traps during period; 3,620 *H. zea* and 50 *H. virescens* to date. (Taft et al., Aug. 9). **GEORGIA** - *H. zea* very heavy in southern area as of August 9. Very heavy in some fields in Sumter County; heavy in Spalding County. Currently heavy over much of State; extremely heavy in some fields. (Womack et al.). **TENNESSEE** - Egg laying still heavy in rank cotton and damage serious throughout western area; eggs and larvae ranged 2-20 per 100 terminals. Larvae damaging all stages of fruit growth on plants. Further increase expected in late rank cotton. Most "cut-out" fields no longer attractive to moths. (Locke). **ALABAMA** - Larvae and adult flights generally increasing throughout State. (McQueen). **MISSISSIPPI** - *H. zea* and *H. virescens* egg laying generally increased throughout delta area. Eggs ranged 5-50 per 100 terminals in Yazoo, Quitman, Tallahatchie, Leflore, Coahoma, Sharkey, Holmes, and Issaquena Counties; mostly 5-15 per 100 terminals. Larvae mostly 3-6 per 100 terminals. Flight activity increased in most areas. (Dinkins). Percent *H. zea* damaged squares averaged 0.7 (maximum 5) in 10 of 25 fields checked in delta counties. More eggs found in latter part of week than for some time. Moths higher in light traps than in several weeks, but lower than usual for time of year. (Pfrimmer et al.). **LOUISIANA** - *H. zea* damaged squares ranged 1-16 (average 4) percent in 109 plots and damaged bolls ranged 1-4 (average 2.4) percent in 89 plots out of 112 experimental plots examined in Madison Parish; damaged squares 1-8 (average 3.6) percent in 11 fields and boll damage 1-4 (average 1.9) percent in 9 fields out of 12 fields surveyed. (Cleveland et al., Aug. 15). **ARKANSAS** - Primarily *H. zea* eggs and/or larvae in 3,114 (52.5 percent) of fields surveyed. Damaged squares in 3,950 fields (71.3 percent); above 5 percent in 461 (8.3 percent) of fields. Treated 698 fields; treated another 692 fields for bollworm and boll weevil. Moths continued very low on sugar line; 2 moths taken on cotton August 7-13. (Dean). Moths increased past 3 weeks in light trap at Kelso, Desha County; increase in area normal for August but much lower than usual. (Boyer).

OKLAHOMA - *H. zea* damage averaged 4 percent in Grady County; continues light in most areas. (Okla. Coop. Sur.). **TEXAS** - Eggs and larvae increased slightly in terminals in McLennan and Falls Counties. Eggs ranged 1.8-11.7 (average 6.4) and larvae 2.2-31.0 (average 7.3) per 100 terminals in 16 treated fields; eggs 3.2-9.6 (average 6.5) and larvae 4.8-14.4 (average 9.5) per 100 terminals in 5 untreated fields. Percent damaged squares ranged 0.3-33.5 (average 9.9) in treated fields and 7.8-14.0 (average 11.2) in untreated fields. Percent damaged bolls ranged 0.7-21.0 (average 7.4) in treated fields and 7.0-13.5 (average 8.9) in untreated fields. Of larvae previously collected on cotton, 79 percent determined *H. virescens*. (Cowan et al.). **NEW MEXICO** - *H. zea* mostly very light in fields in Chaves and Eddy Counties; controls required in occasional fields. (Mathews, Nielsen). Very light at Redrock, Grant County. (Eubank, Elson). **ARIZONA** - *H. zea* slowly appearing throughout State; economic damage in only few fields. (Ariz. Coop. Sur.).

CABBAGE LOOPER (*Trichoplusia ni*) - NORTH CAROLINA - Moderate to heavy in south-eastern area; defoliation of mature leaves heavy. Some controls applied. (Johnson). **SOUTH CAROLINA** - Virus disease eliminating some of defoliation threat. Very heavy at Florence; 721 taken in light trap during period; 1,520 to date. (Taft et al., Aug. 9). **ALABAMA** - Larvae caused much "ragging" of leaves in Montgomery, Greene, Hale, Perry, Pickens, Marengo, Bibb, and other central counties; diseased larvae in most fields. (McQueen). **MISSISSIPPI** - All instars found in Quitman, Tallahatchie, Leflore, Coahoma, and Yazoo Counties; no damage. (Dinkins). "Ragging" foliage, especially on ends of rows, in many fields in delta counties. Virus disease evident and should provide control before economic damage results. (Pfrimmer et al.). **TEXAS** - Light in 4 fields and medium in one in McLennan and Falls Counties. (Cowan et al.). **ARIZONA** - "Ragging" many fields in Yuma, Maricopa, and Pinal Counties. (Ariz. Coop. Sur.).

COTTON LEAF PERFORATOR (*Bucculatrix thurberiella*) - ARIZONA - Causing much concern in Pinal, Maricopa, and Yuma Counties; controls difficult in many cases. (Ariz. Coop. Sur.).

PLANT BUGS - ARKANSAS - Only 9 fields. 40 or more per 100 terminals, above recommended treatment level. Treated 20 fields. (Boyer, Barnes). ARIZONA - Lygus spp. generally heavy in untreated fields; time for control almost past. (Ariz. Coop. Sur.). MISSISSIPPI - L. lineolaris increased in several untreated fields in delta counties. (Pfrimmer et al.).

SPIDER MITES - TENNESSEE - Continue to increase and spread in western area; damage heaviest ever seen by observer. Some fields completely defoliated. Conditions still ideal for further increase. (Locke). SOUTH CAROLINA - Completely defoliated some lighter soil fields. (Sparks, Aug. 6). GEORGIA - Light to heavy throughout State. (Womack). ALABAMA - Numbers and damage, mostly Tetranychus urticae continue to increase in central and northern areas. (McQueen). MISSISSIPPI - T. urticae light to heavy; damage severe in several heavily infested fields in Quitman, Tallahatchie, Leflore, and Coahoma Counties. (Dinkins). Light in 5 and heavy in 1 of 25 fields checked in delta counties. (Pfrimmer et al.).

TABACCO

VARIEGATED CUTWORM (Peridroma saucia) - WISCONSIN - Third to last instars light; feeding in upper portions of freshly topped tobacco in Dane County. (Wis. Ins. Sur.).

GRASSHOPPERS - TENNESSEE - Some damage to fields due to concentration upon removal of adjacent hay crops. (Cunningham).

SUGARBEETS

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - WASHINGTON - Damaging sugarbeets near Othello, Grant County; controls necessary. (Harwood).

BET WEBWORM (Loxostege sticticalis) - WYOMING - Larvae 2-12 (average 7) per 100 sweeps in Platte and Goshen Counties. (Parshall).

LYGUS BUGS (Lygus spp.) - WYOMING - Adults and nymphs averaged 7 per 100 sweeps in Platte and Goshen Counties. (Parshall).

POTATOES, TOMATOES, PEPPERS

CABBAGE LOOPER (Trichoplusia ni) - ALABAMA - Medium to heavy, feeding on foliage in most commercial tomato acreage at Chandler Mountain, St. Clair County. (Smith et al.). MICHIGAN - Adults increased at many blacklight stations. Highest count (14) at Montcalm County station. Problem on potatoes in same area 2 years ago. (Jones, Aug. 12).

VARIEGATED CUTWORM (Peridroma saucia) - ALABAMA - Developing larvae caused much damage to 8 to 15-inch plants in young 30-acre tomato field in St. Clair County; controls being applied. (Smith et al.).

EUROPEAN CORN BORER (Ostrinia nubilalis) - DELAWARE - Larval infestations averaged 20-40 percent in untreated sweet peppers in Sussex County. (Burbutis). ALABAMA - Few larvae in pimento pepper as harvest begun in Jackson County. (Richardson).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - NORTH DAKOTA - Adults and full-grown larvae averaged 1 per 2 plants on potatoes in Oliver County; damage trace to 10 percent on 50 percent of plants. (Brandvik). NEW YORK - Numerous in Suffolk County. (N.Y. Wkly. Rpt., Aug. 12).

GREEN PEACH APHID (Myzus persicae) - WASHINGTON - Apteræ averaged less than 1 per 100 leaves on potatoes; seed potatoes free August 1 in Whatcom County. (Landis). OREGON - Alates migrating into potato fields in Cloverdale district of Deschutes County week of August 9; not common yet in fields. (Every). PENNSYLVANIA - Very heavy on potatoes in York County. Increasing to moderate levels in western area; still light in northeastern area. (Gesell, Aug. 8). RHODE ISLAND - Increasing in some potato fields in Washington County. (Field).

APHIDS - ALABAMA - Aphis gossypii widespread on pimento peppers in Jackson County. (Richardson). RHODE ISLAND - Macrosiphum euphorbiae increasing in potato fields in Washington County. (Field).

PEPPER MAGGOT (Zonosemata electa) - NEW JERSEY - Trapped 130 adults on 4 stickyboards at Cedarville; 5 adults on 8 stickyboards at Vineland. (Ins.-Dis. Newsltr.).

BEANS AND PEAS

MEXICAN BEAN BEETLE (Epilachna varivestis) - WYOMING - Heavy on beans in Platte and Goshen Counties; larvae averaged 0-13 per plant. Adult emergence begun in some fields. Pupae numerous in fields checked. About 1,400 acres of beans sprayed in Platte County. Controls applied in Goshen County. (Parshall). COLORADO - Adults light, 0-2 per 100 row feet, on beans in Montrose, Delta, and Mesa Counties. Eggs, larvae, and adults present. No sprays applied as of August 7. (Bulla). ARIZONA - High in isolated areas in Cochise County. (Ariz. Coop. Sur.).

COWPEA CURCULIO (Chalcodermus aeneus) - GEORGIA - Moderate on untreated field peas in Spalding County. (Dupree, Aug. 9).

GREEN CLOVERWORM (Plathypena scabra) - WISCONSIN - Larval feeding heavy in wax bean field near Waldo, Sheboygan County. Spraying underway on some Rock County lima bean fields. (Wis. Ins. Sur.). MICHIGAN - Continues normal at all black-light stations. Slight increase over normal collection for this period at Lenawee County station. Counts of 12-31 past week at Montcalm County black-light station do not indicate potential for rapid buildup. Local outbreak on beans required control at Greenville, Montcalm County. Infestation about 15 miles from Montcalm County station. (Wells, Janes, Aug. 12).

ONION THRIPS (Thrips tabaci) - WASHINGTON - Probably this species very heavy on peas and beans at Dayton, Columbia County; serious throughout season in this area. (Miller et al., Aug. 9).

COLE CROPS

CABBAGE LOOPER (Trichoplusia ni) - NEW YORK - Heavy in Suffolk County. (N.Y. Wkly. Rpt., Aug. 12).

CUCURBITS

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - MARYLAND - Adults increasing on Eastern Shore. (U. Md., Ent. Dept.). DELAWARE - Adults increasing in many plantings. (Boys, Aug. 15).

GENERAL VEGETABLES

AN APHID (*Neotoxoptera formosana*) - UTAH - Collected at Logan, Cache County, on dry onions in local market. Det. by V.F. Eastop. This is a new State record. (Knowlton).

MOTTLED TORTOISE BEETLE (*Deloyala guttata*) - OKLAHOMA - Damage moderate to sweet-potato foliage in Payne County. (Okla. Coop. Sur.).

CABBAGE LOOPER (*Trichoplusia ni*) - SOUTH CAROLINA - Damage heavy on collards at Holly Hill, Orangeburg County. (Nettles, Aug. 6).

YELLOW-STRIPED ARMYWORM (*Prodenia ornithogalli*) - DELAWARE - Young larvae abundant on many vegetables in New Castle County. (Burbutis).

VARIEGATED CUTWORM (*Peridroma saucia*) - MICHIGAN - Blacklight collections at all stations showed increase for past week: Lenawee 44; Montcalm 46; Newaygo 52; Berrien 38. (Janes, Aug. 12).

ONION THRIPS (*Thrips tabaci*) - WASHINGTON - Probably this species very heavy on asparagus at Dayton, Columbia County; serious throughout season in this area. (Miller et al., Aug. 9).

SPINACH LEAF MINER (*Pegomya hyoscyami*) - WISCONSIN - Moderate in commercial red beet field in Fond du Lac County. (Wis. Ins. Sur.).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (*Carpocapsa pomonella*) - COLORADO - Adults 2-20 per attractant trap August 1-3. (Bulla). INDIANA - Trapped 59 males (38 previous period) in virgin female traps in orchard at Vincennes. (Dolphin, Aug. 12). NEW JERSEY - Caught 2 adults in bait jar in Gloucester County. (Ins.-Dis. Newsltr.).

ORIENTAL FRUIT MOTH (*Grapholitha molesta*) - INDIANA - Adult activity moderate; trapped 55 adults previous week in bait jars in apple and peach orchard at Vincennes. (Dolphin, Aug. 12).

PEACH TREE BORER (*Sanninoidea exitiosa*) - WASHINGTON - Severely infested cherry trees August 8 in several orchards at Yakima, Yakima County. Nearly all adults emerged by July 31. (Johnson). NEW MEXICO - Problem on peach trees at Santa Fe, Santa Fe County. (Heninger). GEORGIA - Moths flying in untreated peach orchard August 13 in Fort Valley. (Yonce).

LESSER PEACH TREE BORER (*Synanthedon pictipes*) - INDIANA - Male captures at Vincennes orchard decreased from 216 to 203; adults of second generation continued to emerge. (Dolphin, Aug. 12).

PEACH TWIG BORER (*Anarsia lineatella*) - COLORADO - Little injury in early peaches being harvested. (Bulla). OREGON - Much damage to peaches in The Dalles, Wasco County; larvae in fruit, pupation occurring. (Zwick).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - INDIANA - Trapped 546 males of third adult flight (655 previous period) at Vincennes orchard in virgin female traps. (Dolphin, Aug. 12).

APPLE MAGGOT (*Rhagoletis pomonella*) - MINNESOTA - Adults still present. (Minn. Ins. Rpt.). WISCONSIN - Numbers caught August 8-13 highest at Madison (165 on crab apple, 10 on apple) and at Oregon (85) in Dane County. (Wis. Ins. Sur.). INDIANA - Main flight at Vincennes almost over; 3 caught (19 previous period) on stickyboards. Several (5) second-generation flies emerging in field cages confirmed evidence for partial second generation in southern area. (Dolphin, Aug. 12). NEW JERSEY - Adults trapped by county: Gloucester 14 on 3 stickyboards,

Burlington 3 on 2 stickyboards, and Mercer 5 on 1 stickyboard. (Ins.-Dis. Newsltr.). NEW YORK - Emergence light in Monroe and Orleans Counties. (N.Y. Wkly. Rpt., Aug. 12). VERMONT - Adults unexpectedly heavy on false apple lures in southern locations August 8-11. (MacCollom).

TEPHRITID FLIES (*Rhagoletis* spp.) - MICHIGAN - Appear less troublesome than in 1967 in Antrim, Grand Traverse, and Leelanau Counties. (Janes, Aug. 12). WISCONSIN - Marked decline in Door County. (Wis. Ins. Sur.).

APPLE LEAFHOPPER (*Empoasca maligna*) - MINNESOTA - Severe on several species of apple grafts at Stillwater, Washington County. (Minn. Ins. Rpt.).

ARMORED SCALES - GEORGIA - *Pseudaulacaspis pentagona* egg counts of third generation probably peaked August 14. Few crawlers at Fort Valley. (Yonce). OREGON - *Lepidosaphes ulmi* crawlers feeding on cherry fruits at Cove, Union County; damaged fruits near heavily infested willows week of August 2. (Every).

EUROPEAN RED MITE (*Panonychus ulmi*) - IOWA - Increased sharply on central area apples. (Iowa Ins. Sur.). INDIANA - Commercial apple orchard at Vincennes averaged 5.9 adults, 5.9 immatures, and 19 eggs per leaf. This increase over previous week indicates potential for increase in local orchards. (Dolphin, Aug. 12). DELAWARE - Infestation continuing in some apple orchards. (Boys, Aug. 15). NEW YORK - Buildup major concern in several orchards in Monroe and Orleans Counties. (N.Y. Wkly. Rpt., Aug. 12). VERMONT - Bronzed trees in one orchard. (MacCollom).

SPIDER MITES - OREGON - Mostly *Tetranychus* spp. heavy on most tree fruits in Hood River, Hood River County, and The Dalles, Wasco County. Controlled by *Typhlodromus* spp. (phytoseiid mites) in The Dalles. (Zwick). COLORADO - *T. urticae* high, 20-80 per leaf, in apple and pear orchards in Mesa and Delta Counties. Bronzed leaves; continuous controls needed. (Bulla, Sisson). PENNSYLVANIA - *T. telarius* increasing rapidly on apples in fruit belt in southeastern area. (Tetrault, Aug. 9).

PEACH SILVER MITE (*Aculus cornutus*) - GEORGIA - Increasing on peaches in Spalding and Sumter Counties. (Tippins).

WALNUT CATERPILLAR (*Datana integerrima*) - OHIO - Larvae severely defoliated walnut trees through much of State except for southeast area. Defoliation widespread through Franklin, Madison, Pickaway, and Fairfield Counties; completely defoliated many trees. Larvae not on some defoliated trees, probably left to pupate. (Rose).

ALDER SPITTLEBUG (*Clastoptera obtusa*) - MISSISSIPPI - Heavy on pecans in Lamar County in late July and early August; caused many nuts to drop and affected quality of remaining nuts. Infestation peaked latter part of July. (Dinkins).

OBSCURE SCALE (*Melanaspis obscura*) - FLORIDA - Infested Stuart pecan trees July 29 at Jay, Santa Rosa County, for a new Florida Department of Plant Industry host record. (Whitcomb).

MITES - GEORGIA - Light to moderate on Toombs County pecans. (Daniels, Aug. 9). CALIFORNIA - *Aceria erineus* medium on walnut leaves at Petaluma, Sonoma County. (Cal. Coop. Rpt.).

CITRUS

GLOVER SCALE (*Lepidosaphes gloverii*) - FLORIDA - Infested sweet orange June 7 at Bushnell, Sumter County, for a new Florida Department of Plant Industry county record. (Holder).

CALIFORNIA RED SCALE (*Aonidiella aurantii*) - FLORIDA - Infested sweet orange June 10 at Umatilla, Marion County. for a new Florida Department of Plant Industry county record. (DeWolf et al.).

PURPLE SCALE (*Lepidosaphes beckii*) - FLORIDA - Infested sweet orange June 11 at St. Cloud, Osceola County, for a new Florida Department of Plant Industry county record. (Smith et al.).

BLACK SCALE (*Saissetia oleae*) - CALIFORNIA - Heavy in citrus at Rohnert Park, Sonoma County. (Cal. Coop. Rpt.).

NAVEL ORANGEWORM (*Paramyelois transitella*) - CALIFORNIA - Larvae heavy on lemon nursery stock at Los Altos, Santa Clara County. (Cal. Coop. Rpt.).

OTHER TROP. & SUBTROP. FRUITS

CORN SAP BEETLE (*Carpophilus dimidiatus*) - TEXAS - Heavy on McLennan County figs. (Collier).

SMALL FRUITS

APHIDS - OREGON - *Chaetosiphon fragaefolii* still abundant in strawberry fields in Yamhill and Columbia Counties; unusually prevalent in 1968. (Every). UTAH - *Cryptomyzus ribis* cupped and discolored red currant foliage at Sugarville, Millard County, and Payson, Utah County. (Knowlton, Aug. 6). MARYLAND - *Aphis rubifolii* curled blackberry leaves July 11 in planting near Hyattsville, Prince Georges County. Det. by T.L. Bissell. (U. Md., Ent. Dept.).

A PSYLLID (*Trioxa tripunctata*) - MARYLAND - Curled and stunted blackberry shoots in large planting near Fairland, Prince Georges County. (U. Md., Ent. Dept.).

FALL WEBWORM (*Hyphantria cunea*) - NEW JERSEY - Appearing in some Atlantic County blueberry fields; expected soon in Burlington County. (Ins.-Dis. Newsltr.).

SPIDER MITES (*Tetranychus* spp.) - NEW JERSEY - Beginning to increase in some strawberry fields. (Ins.-Dis. Newsltr.). MARYLAND - *T. atlanticus* caused heavy yellowing in large garden strawberry planting near Wye Mills, Talbot County. (U. Md., Ent. Dept.).

ORNAMENTALS

BAGWORM (*Thyridopteryx ephemeraeformis*) - TENNESSEE - Heavier in 1968 than in recent years in Grainger County; severely damaged ornamentals and shade trees. (Daugherty). NEW JERSEY - Common statewide. (Ins.-Dis. Newsltr.).

ARMORED SCALES - FLORIDA - *Aspidiotus spinosus* and *Parlatoria proteus* infested torreyia June 5 at Miami, Dade County, for new Florida Department of Plant Industry host records. (Dillon, Dowling).

CITRUS MEALYBUG (*Planococcus citri*) - CALIFORNIA - Heavy on stephanotis nursery stock in Fallbrook, San Diego County. (Cal. Coop. Rpt.).

A WEEVIL (*Brachyrhinus cribricollis*) - CALIFORNIA - Adults heavy on and around rose bushes in Oxnard and elm trees at Port Hueneme, Ventura County, and on abelia plants locally at Sacramento, Sacramento County. (Cal. Coop. Rpt.).

SPIDER MITES - CALIFORNIA - *Eotetranychus lewisi* eggs, nymphs, and adults heavy on poinsettia at Port Hueneme, Ventura County. Damaging in poinsettia-growing areas. (Cal. Coop. Rpt.). ARIZONA - *Tetranychus cinnabarinus* continued problem on arbovitae and pyracantha in Maricopa County. (Ariz. Coop. Sur.).

EASTERN SUBTERRANEAN TERMITE (*Reticulitermes flavipes*) - PENNSYLVANIA - Damaging geranium plants out-of-doors in Susquehanna County July 14, 1968, for a new county record. (Gesell).

FOREST AND SHADE TREES

WHITE-PINE WEEVIL (*Pissodes strobi*) - RHODE ISLAND - Adults emerging; damage statewide. (Field). WISCONSIN - Infested some jack pine west of Bennett, Douglas County. Pupation underway August 7. (Wis. Ins. Sur.).

OREGON FIR SAWYER (*Monochamus oregonensis*) - IDAHO - Adults migrating in Soda Springs area of Caribou County August 12. (Alldaffer).

BLACK TURPENTINE BEETLE (*Dendroctonus terebrans*) - MISSISSIPPI - Heavy on acre of loblolly pine saplings in Monroe County; saplings dying. (Dinkins).

SPRUCE BUDWORM (*Choristoneura fumiferana*) - MINNESOTA - Aerial surveys completed in northern area; followup ground surveys being conducted. Defoliation moderate to serious south of Pelican Lake at Orr, and south and southwest of Lake Vermillion at Cook. Heavy infestation extends southward to point 10-12 miles north of Buhl and Mountain Iron. Controls anticipated in 1969. (Minn. Ins. Rpt.).

JACK-PINE BUDWORM (*Choristoneura pinus*) - WISCONSIN - Moths numerous and active August 2, 3, and 6. Egg surveys began August 13 in Douglas County. Prolonged egg laying period apparent. (Wis. Ins. Sur.).

PINE TUSSOCK MOTH (*Dasychira plagiata*) - MINNESOTA - Larval numbers increased in jack pine stands between Moose Lake and Rutledge; remained low in other areas. (Minn. Ins. Rpt.). WISCONSIN - Eggs first noted July 29 west of Wascott, Douglas County. Eggs numerous in 6-square-mile area. Moths still active. Parasitized cocoons noted. As of August 13, hatching underway and larvae numerous. Scarce elsewhere in Douglas County. (Wis. Ins. Sur.).

SPRUCE NEEDLE MINER (*Taniva albolineana*) - MICHIGAN - Infested several large nursery blocks of Colorado spruce in Saginaw Valley and "Thumb" area of State. (Janes, Aug. 12).

RED-HEADED PINE SAWFLY (*Neodiprion lecontei*) - MINNESOTA - Populations in Willow River area declined greatly from 1967; no chemical suppression used. Virtually no populations on roadside jack pine along U.S. Highway 61 from Hinckley to Moose Lake. (Minn. Ins. Rpt.). RHODE ISLAND - Moderate and local in Washington County. (Kerr).

BALSAM TWIG APHID (*Mindarus abietinus*) - WASHINGTON - Damage heavy to Christmas tree plantings of grand and concolor fir in southwest area. Very heavy in June; peaked in early July; completely declined as of August 16. (Saunders). Flight widespread but sparse from mid-July to August 16 at Yakima and in Columbia Basin east of Cascade Mountains. (Landis).

A BARK BEETLE (*Xylosandrus germanus*) - MISSOURI - In roots of dogwood shipped into State. Collected by J.W. Logan at Cape Girardeau, Cape Girardeau County, June 12, 1968. Det. by D.M. Anderson. This is a new State record. (Barrows).

ELM LEAF BEETLE (*Pyrrhalta luteola*) - ARIZONA - Much lower in 1968 than in past 3 years in State. (Ariz. Coop. Sur.). NEW MEXICO - Damage light at Santa Fe, Santa Fe County, and at Los Alamos, Los Alamos County. (Heninger). Damage medium to heavy at Glenwood, Catron County, and light at Silver City, Grant County. Very heavy at Los Lunas, Valencia County; trees almost defoliated. (Elson). OKLAHOMA - Defoliation continues heavy in west-central, northwest, and panhandle counties. (Okla. Coop. Sur.). TEXAS - Heavy in Wichita, Wilbarger, Foard, Knox, King, Dickens, Motley, and Crosby Counties; lighter on shade trees at Garden City, Glasscock County. (Green et al.). ALABAMA - Larvae and adults defoliating few elm trees in Dallas and Hale Counties. (McQueen).

ALDER FLEA BEETLE (Altica ambiens) - IDAHO - First severe alder defoliation along Hatter Creek, Latah County, in 30 years; defoliated about 60 percent of shrubs. (Callihan).

LOCUST LEAF MINER (Xenochalepus dorsalis) - NEW JERSEY - Adults active at Fort Dix, Burlington County. (Ins.-Dis. Newsltr.). OHIO - Pupation and adult feeding begun in south-central area August 5-9; skeletonizing common on black locust foliage. (Cannon).

MIMOSA WEBWORM (Homadaula anisocentra) - ALABAMA - Light on mimosa and honeylocust in Lowndes, Greene, Dallas, Perry, and Hale Counties. (McQueen). MISSOURI - Second generation well underway; adults numerous. Numerous reports of browned foliage on honeylocust and mimosa. (Munson). IOWA - Larval damage heavy in many locust trees. Some homeowners removed trees rather than apply controls. Found in Linn County for a new county record. (Iowa Ins. Sur.). OHIO - Numbers and defoliation heavy over much of State August 5. First-generation larval activity begun in early June and second-generation larvae now present. (Rose). Moderate to heavy in several locations in Delaware, Marion, and Wood Counties (Peacock) and in south-central and southwestern sections of State (Barth). Heavy on 200 mimosa trees in Mahoning County; second-generation eggs and few early instars present. (Kelly). PENNSYLVANIA - Very heavy on honeylocust, especially in southern Greene County August 2. (Jeffery).

PINK-STRIPED OAKWORM (Anisota virginienensis) - WISCONSIN - Larvae 0.75-1.50 inches long by August 1 near Bardon Lake, Douglas County. Completely defoliated white and red scrub oak over 0.5-square-mile area just east of lake. Larval feeding and pupation complete by August 13. Some larvae failed to pupate; predation on pupae apparent in litter. (Wis. Ins. Sur.).

ORANGE-STRIPED OAKWORM (Anisota senatoria) - GEORGIA - Heavy, defoliated water oaks and red oaks in 3 locations in Gwinnett County. (Shackelford).

SADDLED PROMINENT (Heterocampa guttivitta) - WISCONSIN - Defoliation heavy on beech, maple, and birch on Rock Island, Door County. Larvae 0.5-1.5 inches long; many appeared diseased and dying. (Wis. Ins. Sur.). PENNSYLVANIA - Defoliated sugar maple shade trees in Wayne County. (Gesell, Aug. 7).

FALL WEBWORM (Hyphantria cunea) - NEBRASKA - Moderate on walnut, ash, and oak trees in east and southeast areas; mostly second and third instars. (Keith, Berberet). WISCONSIN - Widespread and spotty in central and east-central counties. Most in third instar in all locations. Elm most often infested. (Wis. Ins. Sur.). OHIO - Webbing and defoliation of deciduous trees continued to increase in most counties. (Rose).

LARCH SAWFLY (Pristiphora erichsonii) - WISCONSIN - Defoliation varied from none apparent to almost complete in western and northwestern counties by August 7. (Wis. Ins. Sur.).

A CECIDOMYIID MIDGE (Dasineura gleditchiae) - IDAHO - Heavy in terminals of young honeylocust tree at Blackfoot, Bingham County. This is a new county record. (Renberg).

A LEAFHOPPER (Fieberiella florii) - CALIFORNIA - Medium on mulberry trees at Rialto, San Bernardino County. This species is a vector of yellow leaf roll disease in peaches. (Cal. Coop. Rpt.).

MAGNOLIA SCALE (Neolecanium cornuparvum) - OHIO - Heavy on 1,000 magnolia plants in Lake County. (Kohankie). Crawlers noted last week in northeastern area. (Rose).

AN ARMORED SCALE (Quernaspis quercus) - CALIFORNIA - Heavy on live oak trees at Redding, Shasta County. (Cal. Coop. Rpt.).

MAN AND ANIMALS

MOSQUITOES - TEXAS - Culex pipiens quinquefasciatus common in Jefferson County and C. salinarius common in southern and central areas. Aedes sollicitans annoying only on Pleasure Island; A. vexans common at Beaumont. Epidemic numbers of Psorophora ferox continued in northern area. Mansonia perturbans numerous in Port Arthur area, reaching total of 16 in one night in light trap; occurred in all sections of county again this month. (Jefferson County Mosq. Cont. Dist., July). MINNESOTA - Trapped 48,191 females, 41,830 A. vexans, in 16 light traps August 3-9. Culex tarsalis fourth highest with 984, a seasonal high. A. vexans dominated evening and daytime bite collections. Aedes spp. dominated 1,484 larval collections; A. vexans in 636. Emergence predicted last week occurred as scheduled on August 15 and 16 but was greatly reduced by controls. Brood developed along Minnesota River bottoms in Mankato area. Controls applied on over 211,000 acres this season through August 15; of this, 107,600 acres aerially treated. Cool nights should restrict flight and annoyance. (Minn. Ins. Rpt.). WISCONSIN - Cool evenings past week curtailed mosquito activity and outdoor activity of humans; biting problem decreased noticeably. A. vexans and A. sticticus still high in some locations; biting may resume with period of hot, humid weather. (Wis. Ins. Sur.). INDIANA - Problem mostly Aedes vexans; spread from northern to central areas following recent extensive precipitation. (Huber).

SCREW-WORM (Cochliomyia hominivorax) - Total of 220 cases reported in U.S. August 4-10 as follows: TEXAS - Aransas 4, Atascosa 6, Bee 6, Bexar 1, Brewster 7, Brooks 20, Coke 1, Crockett 8, Culberson 1, De Witt 4, Duval 4, Edwards 2, Frio 1, Goliad 3, Guadalupe 1, Hidalgo 3, Jeff Davis 1, Jim Hogg 11, Jim Wells 7, Karnes 3, Kenedy 9, Kimble 1, Kleberg 18, Live Oak 8, Medina 1, Menard 1, McMullen 1, Nueces 6, Pecos 15, Refugio 3, San Patricio 4, San Saba 1, Starr 15, Terrell 11, Uvalde 1, Val Verde 12, Wilson 4, Zavala 1; ARIZONA - Cochise 2, Gila 1, Graham 1, Greenlee 1, Maricopa 2, Pima 1, Santa Cruz 3, Yavapai 1; CALIFORNIA - Imperial 1, San Diego 1. Total of 292 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Baja California 1, Territorio sur de Baja California 4, Sonora 61, Chihuahua 30, Coahuila 122, Nuevo Leon 35, Tamaulipas 39. Total of 61 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 60,344,000; New Mexico 1,280,000; Arizona 8,020,000; California 100,000; Mexico 52,404,000. (Anim. Health Div.).

FACE FLY (Musca autumnalis) - WASHINGTON - Light, 4-5 per face in Whitman County; Heterotylenchus autumnalis (a parasitic nematode) parasitism 34 percent. (Telford). SOUTH DAKOTA - High, up to 35 per head on cattle south of Brookings, Brookings County. (Kantack). MISSOURI - Averaged 4.1, 0, 2.8, 2.9, 3.7, 5.4, and 6.6 per cow (10-cow samples) on 7 herds in central area. (Thomas). WISCONSIN - Annoyance light to moderate on cattle in all areas. (Wis. Ins. Sur.). MICHIGAN - Continues medium to high on livestock in many middle and lower counties. (Jones, Aug. 12). INDIANA - Averaged 30-40 per steer in east-central district (Dobson) and 20-30 per head on pastured cattle in northwest and north-central districts (Huber). TENNESSEE - Heavier than usual in Greene County; pinkeye cases fewer than expected. (Cunningham). ALABAMA - Averaged 12 per face on about 30 dairy cows on Lookout Mountain, De Kalb County; some parasitized by Heterotylenchus autumnalis. This is a new county record. (Jones, Ledbetter). GEORGIA - Extremely annoying to beef cattle in northern counties. (Nolan, Aug. 9). MARYLAND - Medium to heavy on cattle and horses throughout central area. Ranged 5-100 per head on dairy cattle in Frederick, Howard, and Baltimore Counties. (U. Md., Ent. Dept.).

HOUSE FLY (Musca domestica) - GEORGIA - Large numbers breeding in garbage dumps and exposed animal waste accumulations. (Nolan, Aug. 9). MICHIGAN - Continued at medium to high level on livestock in many middle and lower counties. (Jones, Aug. 12). WISCONSIN - Numerous around barns in most areas; becoming greater nuisance in homes. (Wis. Ins. Sur.).

HORN FLY (*Haematobia irritans*) - MARYLAND - Light to medium in central area. Up to 75 per head on dairy cattle in Frederick County. (U. Md., Ent. Dept.).
GEORGIA - Large numbers infested beef cattle in State. (Nolan, Aug. 9). **ALABAMA** - Continued heavy on some herds in Wilcox and Mobile Counties; very light on treated dairy herds in Perry and Greene Counties. (Farquhar et al.). **OKLAHOMA** - Averaged 400 per head on cattle in Major County; moderate to heavy in Muskogee, Cherokee, Mayes, and Marshall Counties. (Okla. Coop. Sur.). **MISSOURI** - Averaged 87.0, 360.0, 14.7, 652.5, 305.0, 305.0, and 4.2 per cow (10-cow samples) on 7 herds in central area. (Munson). **INDIANA** - Averaged 250-300 per steer in the east-central district (Dobson); much lighter, 25-50 per animal in northwest and north-central areas (Huber). **MICHIGAN** - Continued at medium to high level on livestock in many middle and lower counties. (Janes, Aug. 12). **WISCONSIN** - Slightly to moderately annoying cattle in all areas; serious nuisance since it remained on cattle 24 hours a day. (Wis. Ins. Sur.). **NORTH DAKOTA** - Ranged 300-600 (average 500) per head on untreated beef herd in Dunn County. (Brandvik). **UTAH** - Increased on cattle in Millard County. Ranged 100-200 on some herds in Deseret and Oasis area on many animals. (Knowlton, July 23).

STABLE FLY (*Stomoxys calcitrans*) - WISCONSIN - Generally numerous and severely annoying cattle in Columbia, St. Croix, Calumet, and Clark Counties. Moderately annoying in Chippewa, Trempealeau, Rock, Price, Winnebago, and most other counties. Greatly interfered with grazing by dairy cows in some areas during warmer days last few weeks. (Wis. Ins. Sur.).

TABANID FLIES - OKLAHOMA - *Tabanus* spp. 6-10 per head on deer in Cherokee and Muskogee Counties. (Okla. Coop. Sur.). **GEORGIA** - Various species annoyed beef cattle in State. (Nolan, Aug. 9). **INDIANA** - Averaged 2-3 per steer in east-central district; 50 percent *T. atratus*. (Dobson).

LONE STAR TICK (*Amblyomma americanum*) - OKLAHOMA - Larvae continue very numerous in Cherokee and Muskogee Counties; nymphs moderate and adults light. (Okla. Coop. Sur.).

BENEFICIAL INSECTS

LADY BEETLES - OKLAHOMA - *Hippodamia convergens* larvae averaged 35 and adults 5 per 10 sweeps in alfalfa in Roger Mills County; adults 3 per plant in sorghum in Kingfisher County. Larvae of this and other species up to 15 per leaf in aphid-infested sorghum in Roger Mills, Beckham, and Washita Counties. (Okla. Coop. Sur.). **WYOMING** - Lady beetle adults and larvae averaged 32 per 100 sweeps on Platte and Goshen County alfalfa. (Parshall). **OREGON** - *Anatis rathvoni* unusually abundant in Curry and Wallowa Counties and near La Grande, Union County. (Every).

GREEN LACEWINGS (*Chrysopa* spp.) - ARIZONA - High in alfalfa and cotton in Cochise County. (Ariz. Coop. Sur.).

HETEROPTEROUS PREDATORS - ARKANSAS - *Orius insidiosus* abundant, major predator in cotton, soybeans, and grain sorghum in extreme northeast area. *Nabis* spp. second most numerous predator in cotton and soybeans in northeast area; not on sorghum. *Geocoris punctipes* third most numerous predator in soybeans and cotton in northeast area; not in sorghum. (Boyer). **WYOMING** - *Nabis* sp. adults and nymphs averaged 19 per 100 sweeps on Platte and Goshen County alfalfa. (Parshall). **ARIZONA** - *Orius* spp. high in Cochise County cotton. (Ariz. Coop. Sur.). **WASHINGTON** - Anthicid bugs more numerous than usual as predators of *Tetranychus mcdanieli* on apples at Yakima, Yakima County. (Johnson, Aug. 9).

A PUNCTURE-VINE SEED WEEVIL (*Microlarinus laeeynii*) - CALIFORNIA - Medium and general on puncture-vine at Twenty-nine Palms, San Bernardino County. (Cal. Coop. Rpt.).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

GRASSHOPPERS - NEW MEXICO - Infested about 7 thousand acres of rangeland west of Las Vegas, San Miguel County; ranged 12-20 per square yard on about 3,000 acres. (Mathews). Counts per square yard averaged 20 on rangeland in southern Lincoln County adjacent to Mescalero Apache Reservation and around 25 in northeast part of reservation. (Eubank). UTAH - Controls necessary on farms and ranches in Cache, Millard, and Sanpete Counties and scattered localities elsewhere in State. (Knowlton, July 23). WYOMING - Sprayed 7,678 acres at Douglas, Converse County; control better than 90 percent. (Patch). NEBRASKA - Moderate to heavy in ditches and field margins in east and southeast areas. Ranged 12-16 per square yard in southern Gage County. Damage moderate to border rows in several cornfields. *Melanoplus differentialis* and *M. femurrubrum* most abundant, followed by *M. bivittatus*. (Keith). SOUTH DAKOTA - Light to threatening in eastern Custer and Fall River Counties along Cheyenne River. Ranged 7-15 per square yard in some alfalfa. *M. differentialis*, *M. bivittatus*, and *M. femurrubrum* dominant. Concentrated in alfalfa, weedy road ditches, and creek bottoms in Shannon County; *M. femurrubrum* dominant. Moisture sufficient to keep crops ahead of grasshoppers, but some corn and seed alfalfa may be damaged. Up to 50 per square yard in 2 alfalfa fields south of Mission, Todd County; damaged adjacent corn. Remained low in Mellette and Bennett Counties, except in few alfalfa fields, in wild sweet-clover, and soil bank fields south of Martin with up to 20 per square yard. (Burge, Zimmerman). NORTH DAKOTA - Adult survey completed in west-central, southwest, and south-central districts. Generally noneconomic in State; light in southwest Morton and northeast Grant Counties. Scattered light to threatening infestations in some soil bank and alfalfa fields in State. *M. femurrubrum*, *M. bivittatus*, *M. differentialis*, and *M. sanguinipes* dominant. (Brandvik et al.). MINNESOTA - Very little change. Highest again in Sherburne County. Remained high on roadsides in Swift, Chippewa, Big Stone, and Stevens Counties. Movement into soybeans increased slightly but may become severe now that grasshoppers are larger. Roadside mowing reduced feeding areas; will force movement into crops. (Minn. Ins. Rpt.). WISCONSIN - *M. femurrubrum* mostly fourth and fifth instar and about 5 percent adult in sandy soiled fields. High, mainly first and second instars in Columbia County field. Generally low in Columbia, Dane, Rock, Dodge, Fond du Lac, Sheboygan, Waushara, Marquette, Washington, and Green Lake Counties. As high as 15 per square yard near margins in few fields. (Wis. Ins. Sur.).

JAPANESE BEETLE (*Popillia japonica*) - INDIANA - Mating adults common, 2-8 per plant on smartweed in soybean field borders at Hamlet, Starke County. (Huber).

PINK BOLLWORM (*Pectinophora gossypiella*) - CALIFORNIA - Sterile moths collected from 2 localities night of July 31: One collected in drop zone four at Pentland and 3 from trap in drop zone two at Edison. Caught 6 sterile males since start of program (2 specimens taken July 1 and 19). Released 1,822,445 sterile moths since program begun. No wild moths collected to date in Kern County. Total of 2,728 sex lure traps in operation throughout cotton counties of San Joaquin Valley. Infestations in desert cotton areas generally averaged 12-15 percent in Imperial Valley proper, 11 percent in Bard Valley, Imperial County, 1.5 percent in Coachella Valley, and 12 percent in Palo Verde Valley, Riverside County. Infestations ranged 0-8 percent in individual fields. (Cal. Coop. Rpt.). ARIZONA - Lighter from Colorado River eastward in Yuma County despite treatment. Controls continued in Yuma and Graham Counties. Many control programs beginning in Maricopa and Pinal Counties. Heavier than last period in spots of Maricopa and Pinal Counties. (Ariz. Coop. Sur.). NEW MEXICO - Found in several fields during green boll inspection in southern Eddy County. Infested up to 10 percent of bolls in most fields checked; up to 15 percent in one field. Infestations averaged less than 2 percent in 18 fields. Some fields treated. (Nielsen).

WHITE GARDEN SNAIL (*Theba pisana*) - CALIFORNIA - Remnant pocket of snails on 3 properties in Manhattan Beach, Los Angeles County. First live snails since July 7, 1967, when 2 estivating snails found. Apparently snails under piled lumber on core property survived repeated treatments and migrated to 2 adjacent properties. Control plans for hand picking of snails. (Cal. Coop. Rpt.).

INSECT DETECTION

A GELECHIID MOTH (Metoplectra potosi Busek) - CALIFORNIA - Adult collected by R.W. Potts April 6, 1968, in light trap in San Ysidro, San Diego County. Det. by R.W. Hodges. This is first collection in United States. Original description from San Luis Potosi, Mexico; known only from Mexico. This is not considered an established infestation at present. (Cal. Coop. Rpt.).

New State Records

AN APHID (Neotoxoptera formosana) - UTAH - On dry onions at Logan, Cache County. Det. by V.F. Eastop. (p. 818).

A BARK BEETLE (Xylosandrus germanus) - MISSOURI - In dogwood roots at Cape Girardeau, Cape Girardeau County. Collected by J.W. Logan June 12, 1968. Det. by D.M. Anderson. (p. 821).

A CADDISFLY (Hydroptila sp.) - HAWAII - In light trap at Honolulu on Oahu May 20, 1968. Det. by C.R. Joyce, confirmed by O.S. Flint. (p. 827).

New County Records

WESTERN BEAN CUTWORM (Lexagrotis albicosta) - NEBRASKA - Clay County. (p. 810).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - MARYLAND - Prince Georges and Washington Counties. (p. 810).

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) - MISSOURI - Laclede and Texas Counties. (p. 812).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - NORTH DAKOTA - McKenzie County. (p. 812).

GLOVER SCALE (Lepidosaphes gloverii) - FLORIDA - Sumter County. (p. 819).

CALIFORNIA RED SCALE (Aonidiella aurantii) - FLORIDA - Marion County. (p. 820).

PURPLE SCALE (Lepidosaphes beekii) - FLORIDA - Osceola County. (p. 820).

EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) - PENNSYLVANIA - Susquehanna County. (p. 821).

MIMOSA WEBWORM (Homadaula anisocentra) - IOWA - Linn County. (p. 822).

A CECIDOMYIID MIDGE (Dasineura gleditchiae) - IDAHO - Bingham County. (p. 822).

FACE FLY (Musca autumnalis) - ALABAMA - De Kalb County. (p. 823).

CORRECTIONS

CEIR 18(31):736 - FILBERTWORM (Melissopus latiferreanus) - WASHINGTON - Delete note. (Wessler, Shanks).

CEIR 18(33):785 - RHODES-GRASS SCALE (Anthonia graminis) - ARIZONA - Should read RHODES-GRASS SCALE (Antonina graminis).

CEIR 18(33):788-789 - ARKANSAS - BOLL WEEVIL - Change 57.6 percent to 68.7 percent. BOLLWORMS - Change 54.6 percent to 65.3 percent. Change no damaged squares in 2,140 fields to no damaged squares in 981 fields. (Boyer).

CEIR 18(33):794 - PECAN NUT CASEBEARER (Acrobasis caryae) - ALABAMA - Change to HICKORY SHUCKWORM (Laspeyresia caryana). (McQueen).

HAWAII INSECT REPORT

New State Record - First adult of a CADDISFLY (*Hydroptila* sp.) collected in light trap at Honolulu International Airport on Oahu May 20, 1968. Four additional specimens taken in light traps from May to July in airport area and one caught at U.S. Public Health Service Quarantine Station in downtown Honolulu August 5. This is third caddisfly species reported in State and apparently undescribed. Det. by C.R. Joyce, confirmed by O.S. Flint. (Joyce).

Corn - Probably TUMID SPIDER MITE (*Tetranychus tumidus*) heavy on sweet corn throughout Waianae, Waimanalo, Waialua, and Pupukea, Oahu. Control difficult in many cases. (Funasaki).

General Vegetables - Intensified BEAN FLY (*Melanagromyza phaseoli*) spray operations continued on seedling beans in many fields on Oahu to prevent oviposition. Numbers heavy in Waiahole and Waimanalo. Adults and larval damage light in Waianae, Kaaawa, Koko Head, Pupukea, and other coastal areas. (Funasaki).
LEAF MINER FLIES (*Liriomyza* spp.) increased considerably on green onion fields throughout Oahu. Medium to heavy in all fields in Koko Head, Waimanalo, Waianae, and Kahuku. Severe on tomatoes and snap beans in many fields in Waianae, Pupukea, and windward areas on Oahu despite heavy spraying. Light to medium on cucumbers and lima beans in Waialua and Pupukea. (Sato et al.).

Fruits - LARGE MANGO TIP BORER (*Bombotelia jocosatrix*) larvae and adults trace on mango trees in various areas on Oahu. (Funasaki).

Beneficial Insects - SOUTH AFRICAN EMEX WEEVIL (*Apion antiquum*), an introduced species, substantially controlled emex (a noxious weed) along main highway in Kamuela, Hawaii Island. Larvae of a CERAMBYCID BEETLE (*Archlagocheirus funestus*) damaged acres of cactus in Kawaihae-uka area, South Kohala on Hawaii Island. Many plants fell to ground; cactus less abundant in area. (Yamayoshi).

Miscellaneous Insects - Adults of a RHOPALID BUG (*Jadera haematoloma*) light on weeds at Pearl City Heights; all stages heavy on balloon vine in Waipahu. All stages of RED-SHOULDERED STINK BUG (*Thyanta accerra*) light to medium on grasses in Honolulu International Airport area, Oahu. (Funasaki).

Weather of the Week continued from page 806.

the polar air that pushed into the northern States, a few tornadoes occurred at scattered locations in the Midwest. One tornado caused widespread minor damage in the St. Louis area, Missouri, Thursday afternoon and several tornadoes struck Chicago's western and northern suburbs and elsewhere in northern Illinois Friday afternoon and evening. Tornadoes and violent weather continued through most of the night in northern Missouri, Iowa, Illinois, Wisconsin, and Michigan. The areal distribution of weekly rainfall amounts over the United States was extremely uneven - typical of the summer season. Many areas where the average rainfall ranged from 0.5 to 1 inch were spotted with totals exceeding 4 inches and, as usual, the southwestern deserts received no rain or only light sprinkles.

TEMPERATURE: In general, two kinds of weather prevailed over the United States during the past week. A front stretching from west of the central Rockies to the Northeast separated cool, comfortable, dry air in the North from the hot, humid, tropical air that covered the South. Temperatures in the 90's were common along the gulf throughout the week and on Sunday afternoon they reached 100° or higher from central Georgia to central South Carolina. This tropical air was especially humid. Dew points on most days exceeded 70° as far north as the Ohio River. The front moved southward late in the week. The Northeast was much cooler by Sunday. In general, the Southeast averaged warmer than normal and other areas averaged cooler than normal. Much of the Great Basin and northern Great Plains averaged 8° to 12° below normal. (Summary supplied by Environmental Data Service, ESSA.)

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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COOPERATIVE ECONOMIC INSECT REPORT**HIGHLIGHTS**Current Conditions

GREENBUG continues economic on sorghum in some States; predators, parasites, and chemical controls reducing infestations. (p. 831).

CORN EARWORM moths increasing in southern Delaware and on Eastern Shore of Virginia; flights heavy in few areas of Wisconsin. CORN LEAF APHID heavy and increasing on corn throughout Maryland; troublesome on sweet corn in many areas of New Jersey. (pp. 831-832).

EUROPEAN CORN BORER most important pest of sweet corn in Hudson Valley of New York; larvae very heavy on much corn in central and eastern Maryland. SORGHUM WEBWORM heavy on sorghum in southern Oklahoma. (pp. 833-834).

GREEN CLOVERWORM continues economic on soybeans in southern and central Minnesota. (p. 837).

LESSER CORNSTALK BORER more serious than in many years in 9 major peanut counties of southeastern Alabama. (p. 837).

BOLL WEEVIL continues heavy in central and southern Alabama; boll damage heavy in late cotton in western Tennessee. BOLLWORM damage remains serious in western Tennessee. (p. 838). SPIDER MITE damage severe on late cotton in western Tennessee; infestations heavy in South Carolina Piedmont. (p. 839).

CABBAGE LOOPER flights heavy in cotton in delta counties of Mississippi; larvae severe on various vegetables on Eastern Shore of Virginia. (pp. 839-841).

EUROPEAN RED MITE increasing on apples and peaches in some areas of Iowa, Indiana, and Ohio. (p. 842). TWO-SPOTTED SPIDER MITE outbreaks severe in apple orchards in Mesa and Delta Counties, Colorado (p. 843).

Mosquito-borne EASTERN VIRAL ENCEPHALITIS reported in horses in central and southern New Jersey and in pheasants on Eastern Shore of Maryland. FACE FLY heavy on cattle throughout Ohio; annoying livestock in other States. (p. 846).

PINK BOLLWORM problem continues on cotton in Yuma County, Arizona. (p. 849).

Detection

New State records include ASIATIC OAK WEEVIL in Arkansas (p. 845) and a PLANT BUG in Oregon (p. 847).

For new county records see page 851.

Reports in this issue are for week ending August 23 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING AUGUST 26

HIGHLIGHTS: Cool and comfortable, West and North; hot and humid Central and East, until weekend. Stormy along front separating air masses.

PRECIPITATION: Generous rains fell in the Pacific Northwest early in the week and in the northern Rockies at midweek. Numerous locations in Oregon and Idaho have received more rain in August 1968 than in any previous August. Air-mass thunder-showers occurred in the Deep South and along the Ohio River on several days during the week. The principal precipitation, however, fell from storms along the front that separated the cold and warm air masses. Severe weather occurred in Minnesota and Wisconsin on Monday when a tornado leveled barns and damaged other buildings in the Kenyon, Minnesota, vicinity and other twisters struck near Marinette, Wisconsin. High winds associated with thunderstorms damaged barns and power lines near Wausau and 3.44 inches of rain fell at Watertown, in about 2 hours on Tuesday morning. Locally heavy rains also fell in the normally dry areas of eastern Arizona - 1 to 2 inches in some localities - on Tuesday. On Wednesday, generous rains fell in southern Utah. Heavy showers - nearly 3 inches - fell at Bemidji, Minnesota, Thursday night and Friday morning when a similar amount fell in northern New Jersey. Only light, widely scattered showers fell in the Southeast. In some eastern areas, last week was the driest week since mid-June. Much of the Desert Southwest and parts of the Corn and Cotton Belts received no rain.

TEMPERATURE: Comfortably cool temperatures occurred from the Pacific Ocean to the western Great Plains and in the northern border States while unseasonably hot weather persisted from the central and southern Great Plains to the Atlantic coast. Throughout most of the week, a front stretched from the Southwest to the northern Great Plains, thence eastward to New England. Cool air lay west and north of the front. A HIGH, centered over the Southeast drove hot, humid, gulf air northward over mid-America. Daytime temperatures over the West were mostly in the cool, comfortable 70's except in the southwestern deserts where they reached the 90's on most days. Nighttime temperatures dropped to the 40's and 50's except, at higher elevations, where minimums below 40° occurred. Flagstaff, Arizona, elevation 7,000 feet, registered 24° Friday morning, August 23, the coldest August temperature of record at Flagstaff. The previous record-low for August was 33°. Numerous locations in Utah registered temperatures near or below the freezing mark on Friday morning. Temperatures along the Canadian border ranged from the upper 50's and 60's in the early mornings to the 70's on most afternoons. Un-Weather continued on page 850.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

GREENBUG (*Schizaphis graminum* (In broad sense))* - TEXAS - Activity on sorghum in Panhandle and High Plains markedly reduced by numerous parasites and predators. About 1.5 million acres of sorghum sprayed during recent heavy sorghum infestation. (Thomas). OKLAHOMA - Decreasing rapidly on sorghum in panhandle counties. Lady beetles ranged up to 125 (average 40) per plant in some fields. Aphids not reinfesting treated fields. Ranged 0-10 per sorghum plant in Major County, averaged 250 per plant 10 days ago. Moderate to heavy in sorghum in Roger Mills, Caddo, Kiowa, Tillman, Bryan, and Marshall Counties. Averaged 1,500 per plant in Tillman County. Light, up to 25 per leaf, on occasional sorghum leaves in Mayes and Rogers Counties. (Okla. Coop. Sur.). KANSAS - Light to trace in many previously heavily infested sorghum fields in Pratt, Kiowa, Ford, Gray, Haskell, Finney, Scott, and Logan Counties. Predators and parasites apparently reduced numbers by 75 percent or more in most fields. Moderate, 2,000 per leaf, in occasional field in southwest district, but predators and parasites reducing aphids. Light in heads, in whorls, and behind leaf sheaths in many cases. Trace numbers may survive in isolated areas for few weeks. (Simpson). NEBRASKA - Trace in volunteer wheatfield in Nuckolls County. (Keith). Small colonies on sorghum test plots at Scotts Bluff Experiment Station; ranged 250-500 per plant on lower leaves of about 5-6 percent of plants. Predators increasing. (Hagen, Aug. 16). SOUTH DAKOTA - Economic on sorghum near Aberdeen, Brown County; near Draper, Jones County; near Winner, Tripp County; and in western Yankton County. Aerial treatments underway. (Kantack). COLORADO - Infestation on sorghum moving north in eastern area. Ranged 0-2,000 per leaf on sorghum and 0-5 per leaf on corn in northeastern area; no damage to corn. Light, 0-200 per lower leaf, on sorghum in Morgan, Logan, Sedgwick, Phillips, and Washington Counties. Controls in progress on sorghum in Yuma, Kit Carson, and Cheyenne Counties; aphids up to 2,000 per leaf. Light to very heavy in all sorghum checked in Prowers, Bent, Otero, Crowley, and Pueblo Counties; controls in progress. (Johnson, Schweissing). WYOMING - Still light, 0-80 per plant, in sorghum in Goshen and Laramie Counties. Light, less than 1 per plant, in cornfield near Carpenter, Laramie County. (Parshall). CALIFORNIA - Adults heavy on cotton leaves in plantings at Riverdale, Fresno County. Aphids in flight from sorghum fields. Heavier and more widespread than in other years. (Cal. Coop. Rpt.).

ASTER LEAFHOPPER (*Macrosteles fascifrons*) - COLORADO - Averaged 2 per 20 square feet in all lettuce fields checked in Pueblo and Otero Counties; up to 23 per 20 square feet in one field. (Schweissing).

BET LEAFHOPPER (*Circulifer tenellus*) - COLORADO - Larvae 15-20 per 100 sweeps on tomatoes in Otero County. (Schweissing).

CORN EARWORM (*Heliothis zea*) - NEW YORK - No moths trapped in Hudson Valley. Larvae still low on sweet corn in central Hudson Valley area. (N.Y. Wkly. Rpt., Aug. 19). NEW JERSEY - Adults increasing on sweet corn. Infestations on lima beans should develop by end of August. (Ins.-Dis. Newsltr.). DELAWARE - Adults increased considerably in blacklight traps in Sussex County. (Burbatis). MARYLAND - Adults averaged 8+ per night in light trap at Centreville. Larvae damaged 30 percent of peppers in 1-acre stand near Salisbury, Wicomico County; larvae generally light in corn on Eastern Shore. (U. Md., Ent. Dept.). VIRGINIA - Very low in light traps on Eastern Shore as of August 14. Increasing greatly after being relatively light early in season in Accomack County. Late-season numbers may exceed those of other years. Damage to late sweet corn excessive; some 100-percent infestations. (Hofmaster). SOUTH CAROLINA - Increasing in soybeans in southern area. Larvae up to 60-80 per 9 row feet in some fields. Damage expected in Piedmont area within 2 weeks. (Thomas, Aug. 20).

* According to recent taxonomic studies by L.M. Russell. This aphid on sorghum appears to be this species.

MICHIGAN - Appearance will be later than normal date of August 20-28; no moths detected at blacklight stations as of August 18. (Newman). WISCONSIN - Heavy flights at few locations early this week indicated by blacklight catches. (Wis. Ins. Sur.). SOUTH DAKOTA - Third to fifth instars infested 2 percent of corn ears in field near Yankton, Yankton County. (Jones). NEBRASKA - Ear infestations ranged 5-35 percent in 9 cornfields in Saline, Fillmore, Clay, Nuckolls, Thayer, and Jefferson Counties. (Keith). Infestations 3-15 percent in 15 cornfields in Seward, Butler, Polk, and Platte Counties. (Keith, Jansen). Light, infested about 5-6 percent of plants in 11 cornfields in Madison, Pierce, Antelope, Holt, Wheeler, and Greeley Counties. (Keith, Berberet). KANSAS - Early instars averaged 1 per plant on 50 percent of plants in McPherson County sorghum field. Trace to heavy on corn in southwest quarter of State. (Simpson). ARKANSAS - Only scattered and light on soybeans; next 2 weeks critical. Moths could concentrate in soybeans due to "cut-out" of cotton. (Boyer). OKLAHOMA - Ranged 2-10 per ear in all ears checked in cornfield in Craig County. (Okla. Coop. Sur.). NEW MEXICO - Larvae 1 or more per ear on 70-95 percent of ears in 9 cornfields in Virden Valley, Hidalgo County. (Nielsen). COLORADO - Larval infestations ranged 5-55 (average 28) percent in corn in Pueblo, Crowley, Otero, Bent, and Prowers Counties. (Schweissing). ARIZONA - Injured sorghum heads on 6 of 10 plants examined in Graham County. (Ariz. Coop. Sur.).

CORN LEAF APHID (*Rhopalosiphum maidis*) - NEW YORK - Predators increasing on sweet corn and natural decline of aphids begun in Hudson Valley: deep penetration of aphids into whorls in previous weeks very evident. (N.Y. Wkly. Rpt., Aug. 19). NEW JERSEY - Still troublesome on sweet corn in many areas. (Ins.-Dis. Newsltr.). MARYLAND - Heavy and increasing on corn statewide. (U. Md., Ent. Dept.). VIRGINIA - Light to heavy on Rockbridge and Augusta County corn. (Woodside, Aug. 5). MICHIGAN - Continued to decline on field corn. (Janes, Thompson, Aug. 19). WISCONSIN - Light on corn in southern third of State. Colony of 500 or more aphids rare. Field corn past stage for damage in most areas. Syrphid flies and lady beetles numerous on corn and should provide good biological control for several weeks. (Wis. Ins. Sur.). KANSAS - Light in sorghum examined in central, south-central, southwest, and west-central districts. Aphids behind leaf sheath and in many cases in head. Light in many cornfields. (Simpson). COLORADO - Extremely light on corn in northeastern area; found throughout eastern section. Light to heavy on sorghum in eastern area; very light in north-eastern area. (Johnson, Schweissing). WYOMING - Ranged 0-150 per corn plant and 0-200 per sorghum plant in Goshen and Laramie Counties. (Parshall).

HORNWORMS (*Manduca* spp.) - VIRGINIA - *M. sexta* moth collections continue very high, but only occasional *M. quinquemaculata* moths taken in Accomack County. (Hofmaster). MARYLAND - Full-grown larvae light on tobacco throughout southern area; averaged 1 per plant. Damage heavy on several acres of tobacco near Sandgates, St. Marys County. (U. Md., Ent. Dept.). NEW YORK - *M. quinquemaculata* problem in many Suffolk County gardens. (N.Y. Wkly. Rpt., Aug. 19). OREGON - *M. quinquemaculata* larvae very prevalent on garden tomatoes in Medford area, Jackson County. (Berry).

POTATO LEAFHOPPER (*Empoasca fabae*) - MISSOURI - Ranged 60-140 per 10 sweeps on alfalfa in east-central area. (Munson). MARYLAND - Decreasing rapidly on hay crops and vegetables statewide. (U. Md., Ent. Dept.).

POTATO PSYLLID (*Paratrioza cockerelli*) - WYOMING - Adults ranged 0-4 (average 1.6) per 100 sweeps in potatoes in Goshen and Laramie Counties. (Parshall).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - OKLAHOMA - Ranged 100-200 per 10 sweeps in alfalfa in Caddo County. Heavy in scattered fields in Garvin County; light to moderate in Murray County. (Okla. Coop. Sur.). WYOMING - Ranged 7-60 per 100 sweeps in third-growth alfalfa in Goshen and Laramie Counties. (Parshall). COLORADO - Ranged 0-1,500 per 100 sweeps in alfalfa in Arkansas Valley; heaviest in Crowley County. Trace in Mesa, Delta, and Montrose Counties. (Schweissing, Bulla).

CORN, SORGHUM, SUGARCANE

CORN ROOTWORMS (*Diabrotica* spp.). - ILLINOIS - *D. virgifera* in Logan, Mason, Adams and De Kalb Counties for new county records. *D. longicornis* and *D. virgifera* adults per corn plant by district: East 0-11.0 (average 1.6), northeast 0-6.2 (average 2.2), northwest 0-7.2 (average 1.1), and west 0-2.9 (average 1.2). (Ill. Ins. Rpt.). WISCONSIN - Adult survey in corn half complete. Varied greatly between areas and between fields in an area. Averaged 10+ per plant in few fields, but averaged 0-4 per plant in most fields in southern third of State. *D. longicornis* predominant statewide. *D. virgifera* second in abundance in most areas, but most numerous where larval numbers low. *D. undecimpunctata howardi* third in abundance except where *D. virgifera* absent. (Wis. Ins. Sur.). MINNESOTA - Preliminary results of adult survey on corn in southern area. Highest averages per acre in Carver (58,647) and Winona (57,577) Counties. *D. longicornis* 13-100 percent of population, *D. virgifera* 0-87 percent. Second highest averages (21, 345-34,041 per acre) in 6 counties in southern 3 tiers of counties; *D. longicornis* dominant in all but 1 of 6 counties. (Minn. Ins. Rpt.). SOUTH DAKOTA - *D. virgifera* adults as numerous as week ago; averaged 2-6 per stalk in cornfields in southwestern Lincoln County and 4-5 per stalk in northern Yankton County. Adults heavy, 20-42 per stalk, in localized areas of some fields in Yankton County. *D. longicornis* adults abundant in cornfields in Lincoln County; represents up to 90 percent of adults in some fields. About 5 percent of adults *D. undecimpunctata howardi* in Lincoln County. (Jones). NEBRASKA - *D. virgifera* and *D. longicornis* adult infestations ranged from less than 1 to 10 (average 4-5) percent in 9 cornfields in Saline, Fillmore, Clay, Nuckolls, Thayer, and Jefferson Counties. (Keith). Up to 15 per plant in Madison County field. (Keith, Berberet).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - MARYLAND - Ranged 1-3 per ear in corn near Keymar, Carroll County. Infestations up to 90-100 percent in many northern Frederick County fields. (U. Md., Ent. Dept.). OHIO - Ranged 0-284 per 10-plant sample on corn in preliminary results of adult survey. Lightest in south-central counties, but generally higher in southwestern counties. "Goosenecking" on 1-20 percent of plants in 3 fields in Madison and Adams Counties. (Rose). INDIANA - Adult emergence continues light in State. (Huber).

SOUTHERN CORN ROOTWORM (*Diabrotica undecimpunctata howardi*) - OHIO - Generally light; most common in south-central area. (Rose). NORTH DAKOTA - Adults up to 6 per plant on corn in Richland and Ransom Counties. (Brandvik). COLORADO - Adults light, 0-2 per field, in corn and sorghum in northeastern area. (Johnson).

WESTERN CORN ROOTWORM (*Diabrotica virgifera*) - WYOMING - Adults 0-7 per corn plant in Laramie and Goshen Counties. (Parshall). NORTH DAKOTA - Adult emergence light in Richland County; averaged 1 per 100 plants. (Brandvik). INDIANA - None found in State as of August 23. (Matthew).

CORN FLEA BEETLE (*Chaetocnema pulicaria*) - MARYLAND - Damage much above normal on corn in central counties in 1968. (U. Md., Ent. Dept.).

SAP BEETLES - MARYLAND - *Carpophilus lugubris* buildup continues in corn on Eastern Shore; infestations up to 40-65 percent in Queen Annes, Talbot, and Dorchester Counties. (U. Md., Ent. Dept.). OHIO - *Glischrochilus quadrisignatus* up to 10 and 15 per corn ear tip common; often associated with European corn borer damage throughout southern and southwestern areas. (Rose).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NEW YORK - Most important pest on sweet corn in Hudson Valley. Moths still increasing; 29 caught August 13-14 in Poughkeepsie traps. Early instars infested 25 percent of untreated mid-whorl plants. Peak of second-brood hatching may be delayed past August 25. (N.Y.

Wkly. Rpt.). MARYLAND - Larvae very heavy in many cornfields in central and eastern sections. Second-generation larvae in ear tips in many completely infested fields in Frederick, Montgomery, and Howard Counties. Larvae much above normal statewide in 1968. (U. Md., Ent. Dept.). VIRGINIA - Third-brood moth emergence apparently peaked past week on Eastern Shore. (Hofmaster). OHIO - Larval observations indicate second generation numerous in 1968. Large first-generation flight during August may indicate larval increases. (Rose). MICHIGAN - Eggs and larval feeding noted on sweet corn; eggs generally light on some plantings. (Janes, Thompson, Aug. 19). MISSOURI - Fourth and fifth instars infested 5-32 percent of ear tips on corn in east-central area. (Munson). SOUTH DAKOTA - Second to fourth instars infested 80 percent of cornfield in northern Yankton County. (Jones).

FALL ARMYWORM (*Spodoptera frugiperda*) - ALABAMA - Larvae, 1-5 per stalk, "ragging" leaves of 24 to 36-inch high grain sorghum in 100-acre field in Montgomery County; second generation begun. First generation very light, but second generation heavy in sorghum field in Perry County. First generation causing much damage to dough-stage corn in field in Hale County; lodging evident. (Glass et al.). NEW YORK - Increasing slowly; all stages on sweet corn in Hudson Valley. Found in sweet corn field in whorl stage in Suffolk County. (N.Y. Wkly. Rpt., Aug. 19).

WESTERN BEAN CUTWORM (*Lexagrotis albicosta*) - NEBRASKA - Collected in Clay, Polk, Platte, and Greeley Counties for new county records. Fourth instar to full-grown larvae ranged 1-3 per ear on from less than 1 to 15 percent of corn plants. (Keith, Berberet). WYOMING - Total of 16 moths collected in blacklight trap July 22-28 in Goshen County; none taken July 29-August 4. (Parshall).

SORGHUM WEBWORM (*Celama sorghiella*) - OKLAHOMA - Heavy in heading sorghum in Carter, Murray, Love, Johnston, and Marshall Counties. Ranged up to 100 per in Marshall County. Few fields sprayed. (Okla. Coop. Sur.).

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - ARIZONA - Damaged sorghum in Pinal County; may seriously damage some late-planted sorghum fields. (Ariz. Coop. Sur.).

SORGHUM MIDGE (*Contarinia sorghicola*) - TEXAS - Activity heaviest on grain sorghum in Garza County. Damage expected on blooming grain sorghum in Lynn, Lubbock, Crosby, and Floyd Counties. Adults per 25 grain sorghum heads ranged from 1 in Hockley County to 707 in Garza County during survey of 12 High Plains counties August 13-19. (Almand, Fieldon).

A WHITEFLY (*Aleurocybotus occiduus*) - ARIZONA - Very heavy on sorghum in Yuma County; root damage similar to that of 1967. May be factor in root rot problem. (Ariz. Coop. Sur.).

GRASSHOPPERS - MARYLAND - Melanoplus spp. adults and nymphs stripping corn border rows statewide. (U. Md., Ent. Dept.).

BANKS GRASS MITE (*Oligonychus pratensis*) - NEBRASKA - Heavy on corn in Mitchell Valley area, Scotts Bluff County. Leaf damage progressed up above ears. Controls applied. (Hagen). IDAHO - Collected from lower corn leaves on field margins at Castletford, Twin Falls County, August 2 and Shoshone, Lincoln County, August 3. Det. by J.L. Mellott. (Hopkins et al.).

SPIDER MITES - KANSAS - Heavy on lower leaves in Pratt County cornfield; leaf discoloration noticeable. (Simpson). WYOMING - Colonies remain small on corn plants in Goshen and Laramie Counties. "Burn" noted on bottom 3 leaves in 2 fields in Goshen County. (Parshall). COLORADO - Tetranychus urticae light to moderate on corn in State. (Johnson et al.).

SMALL GRAINS

RICE WATER WEEVIL (Lissorhoptrus oryzophilus) - CALIFORNIA - Adults medium on leaves of rice plants in 1,000-acre planting at Willows, Glenn County. (Cal. Coop. Rpt.).

A FLEA BEETLE (Chaetocnema sp.) - CALIFORNIA - Heavy on rice plantings at Holtville, Imperial County. (Cal. Coop. Rpt.).

TURF, PASTURES, RANGELAND

TWO-LINED SPITTLEBUG (Prosapia bicincta) - FLORIDA - First damage of 1968 occurred by July 24 on Bermuda grass at Range Cattle Station in Hardee County. Adults averaged about 4 per 20 sweeps and nymphs 4 per square foot. Adult numbers light by August 15, but nymphs per square foot averaged 17 in Pangola grass pastures currently held in reserve, 6 in grazed pastures, and less than 1 in pastures chopped in June or in grass removed for hay or silage in July or August. Damage to Pangola grass imminent when adult populations peak again. (Fagan).

CHINCH BUG (Blissus leucopterus) - ALABAMA - Heavy, damaged 2 St. Augustine grass lawns in Montgomery and Dallas Counties. (Thornton, Scarsbrock). NEW YORK - Still active in Nassau County lawns; bentgrass most affected. (N.Y. Wkly. Rpt., Aug. 19).

RED-LEGGED GRASSHOPPER (Melanoplus femurrubrum) - VIRGINIA - Adults heavy and feeding in some pastures in Rappahannock County. Ranged 7-13 per square yard, but grass not seriously damaged. (Allen, Lyne).

A BILLBUG (Sphenophorus phoenixiensis) - CALIFORNIA - Adults heavy on hybrid Bermuda grass at Manhattan Beach, Los Angeles County. (Cal. Coop. Rpt.).

FORAGE LEGUMES

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - OKLAHOMA - Nymphs ranged 2-3 per crown in alfalfa in Milburn area, Johnston County, and in Hendrix and Yuba areas, Bryan County. Girdling stems and killing plants. Up to 80 percent of stems killed in some fields. Most alfalfa in these areas being cut. (Okla. Coop. Sur.). NEW MEXICO - Very abundant in alfalfa at Virden, Hidalgo County. Ranged 35-86 per sweep in 3 recently cut alfalfa fields. Lighter in uncut alfalfa. (Nielsen). Increasing in alfalfa near Hatch, Dona Ana County; averaged 5-8 per sweep. (Eubank). ARIZONA - Counts unchanged on alfalfa in Yuma, Pinal, and Maricopa Counties. (Ariz. Coop. Sur.).

MEADOW SPITTLEBUG (Philaenus spumarius) - VIRGINIA - Adults light in Nottoway, Amelia, Powhatan, New Kent, Chesterfield, Hanover, and Cumberland Counties as of August 14. Adults currently light on ragweed, soybean, and/or red clover in Stafford, King George, Westmoreland, Richmond, Essex, King and Queen, and King William Counties. These 7 counties new county records. (Allen). ILLINOIS - Average per sweep on alfalfa, clover, and wheat stubble by district: Northwest 1.3, west 1.2, and central 0.6. (Ill. Ins. Rpt.). MISSOURI - Collected in red clover in Lincoln County for a new county record. (Munson).

PEA APHID (Acyrtosiphon pisum) - WYOMING - Ranged 50-900 (average 400) per 100 sweeps in alfalfa in Goshen and Laramie Counties. (Parshall). COLORADO - Increased in alfalfa in Arkansas Valley; ranged 150-25,000 per 100 sweeps. Heaviest in Otero, Bent, and Prowers Counties. Stunting and yellowing noted in heavily infested fields. Light to moderate in southwest area. (Schweissing, Bulla). NEW MEXICO - Very light in Virden Valley alfalfa. (Nielsen).

LYGUS BUGS (*Lygus* spp.) - WYOMING - Nymphs and adults ranged 5-30 per 100 sweeps in alfalfa in Goshen and Laramie Counties. (Parshall). COLORADO - Adults and nymphs ranged 0-200 per 100 sweeps in alfalfa in eastern area. (Johnson, Schweissing). UTAH - *Lygus* spp., *L. elisus*, and *L. hesperus* still numerous in many alfalfa seed fields throughout Millard County. Adults usually 70-90 percent of specimens. (Knowlton, Aug. 20). ARIZONA - Counts unchanged on Yuma County alfalfa. (Ariz. Coop. Sur.).

ALFALFA PLANT BUG (*Adelphocoris lineolatus*) - WYOMING - Ranged 19-42 (average 31) per 100 sweeps in alfalfa in Goshen and Laramie Counties. (Parshall). NEBRASKA - Averaged 8 per 20 sweeps in Polk County alfalfa field. (Keith, Jansen).

ALFALFA WEEVIL (*Hypera postica*) - MICHIGAN - Adults 10-23 and late instars 6-13 per 200 sweeps in 2 southern counties; adults result of late emergence. (Newman, Aug. 19). COLORADO - Larvae increasing in alfalfa in Pueblo and Crowley Counties; ranged 40-1,000 per 100 sweeps. Noneconomic in most fields. (Schweissing). WYOMING - Larvae 0-8 and adults 0-9 per 100 sweeps in alfalfa in Goshen and Laramie Counties. (Parshall). OREGON - One late instar and 5 adults taken in 100 sweeps in mature alfalfa seed field near Keno, Klamath County, August 21. (Westcott).

ASIATIC OAK WEEVIL (*Cyrtopistomus castaneus*) - MISSOURI - Adults taken from red clover in Jefferson County for a new county record. (Munson).

PEA LEAF WEEVIL (*Sitona lineatus*) - OREGON - Two adults taken in alfalfa field near Klamath Falls, Klamath County, week of August 9. (Schuh). This is a new county record. (Westcott).

BLACK BLISTER BEETLE (*Epicauta pennsylvanica*) - WYOMING - Adults 27-90 per 100 sweeps in 4 alfalfa fields in Goshen County. (Parshall). COLORADO - Adults 0-20 per 100 sweeps in alfalfa in Morgan and Logan Counties. (Johnson).

SOUTHERN CORN ROOTWORM (*Diabrotica undecimpunctata howardi*) - WYOMING - Adults averaged 4 per 100 sweeps in 3 alfalfa fields in Goshen and Laramie Counties. (Parshall). COLORADO - Adults light, 0-2 per field, in alfalfa in northeastern area. (Johnson). NEBRASKA - Adults of this species averaged 4 and *D. virgifera* 1 per 20 sweeps in Polk County alfalfa field. (Keith, Jansen). VIRGINIA - Adults 100 per 100 sweeps in Amelia County alfalfa field. (Allen, Aug. 14).

ALFALFA CATERPILLAR (*Colias eurytheme*) - COLORADO - Larvae ranged 0-200 per 100 sweeps in alfalfa in Arkansas Valley. (Schweissing). VIRGINIA - Larvae 20 per 100 sweeps on Amelia County alfalfa. (Allen, Aug. 14).

GREEN CLOVERWORM (*Plathypena scabra*) - MARYLAND - Counts per 10 sweeps on alfalfa ranged 3-7 in central counties and 5-10 on Eastern Shore. (U. Md., Ent. Dept.).

BEEF ARMYWORM (*Spodoptera exigua*) - ARIZONA - Continues problem on Yuma County alfalfa. (Ariz. Coop. Sur.).

GRASSHOPPERS - ILLINOIS - Averages per square yard on alfalfa, clover, and wheat stubble by district: West - 4.4 in fields, 6.6 on margins; central - 3.4 in fields, 4.1 on margins; and northwest - 2.3 in fields, 4.1 on margins. (Ill. Ins. Rpt.).

STRAWBERRY SPIDER MITE (*Tetranychus atlanticus*) - CALIFORNIA - Heavy on alfalfa plantings at Visalia, Tulare County. (Cal. Coop. Rpt.).

SOYBEANS

GREEN CLOVERWORM (Plathypena scabra) - VIRGINIA - Larvae 20-100 per 100 sweeps in Cumberland, Hanover, Prince Edward, Nottoway, Amelia, and New Kent Counties as of August 14. Larval feeding confined to leaves and noneconomic. Currently most common species in soybeans. Larvae 50-100 per 100 sweeps in King George, Westmoreland, Richmond, Essex, King and Queen, and King William Counties. Damage continues to be noneconomic. (Allen). INDIANA - Little change noted in northern and central counties. Defoliation 10-15 percent in most heavily infested fields. Numbers generally noneconomic and decreasing. Larvae ranged from 1 per 5 row feet to 4 per foot in Spencer County; defoliation less than 15 percent. (Matthew). MICHIGAN - Collections at all stations remain low. Total of 17 moths taken in Montcalm County and 22 in Lenawee County. Situation not severe enough to cause more than individual field problems. (Janes, Newman, Aug. 19). MINNESOTA - Economic in southwest, south-central, and central districts; sprays applied in these districts. Fungus disease apparently reduced numbers in McLeod County. (Minn. Ins. Rpt.). IOWA - Another generation of larvae appearing in central and north-central areas. Nearly mature soybeans show little damage. (Iowa Ins. Sur.). NEBRASKA - Ranged 7-15 (average 10) per 25 sweeps in 3 fields surveyed in Seward, Butler, and Polk Counties. (Keith, Jansen).

NOCTUID MOTHS (Heliothis spp.) - ALABAMA - Larval feeding damage light to medium in some fields in Geneva County. (Smith).

CABBAGE LOOPER (Trichoplusia ni) - ALABAMA - This species and Pseudoplusia includes much "ragging" of leaves in some fields in Geneva County. (Smith).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ALABAMA - Earlier larval damage resulted in poor stand in several fields in Covington County, especially in dry areas. (Linder). SOUTH CAROLINA - Caused broken stalks in Hampton and Allendale Counties. (Thomas, Aug. 20).

MEXICAN BEAN BEETLE (Epilachna varivestis) - VIRGINIA - Adults 60 per 100 sweeps in 20-acre field in New Kent County; generally very light in Cumberland, Hanover, Prince Edward, Nottoway, and Amelia Counties. (Allen, Aug. 14). SOUTH CAROLINA - Increasing, but well below 1967 level. (Thomas, Aug. 20). Controls applied in Clarendon County and effective in Dillon County. (Nettles, July Rpt.). INDIANA - Defoliating soybeans in Ripley County; controls in progress. (Lehker).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - MARYLAND - Adults damaged 10 percent of 60-acre stand near Centreville, Queen Annes County. (U. Md., Ent. Dept.).

BEAN LEAF BEETLE (Cerotoma trifurcata) - NEBRASKA - Averaged about 2 per 25 sweeps in 3 fields in Seward County. (Keith, Jansen).

GRASSHOPPERS - MARYLAND - Melanoplus spp. damaged 10 percent of 15-acre field near Churchill and 40 percent of 5-acre stand near Ingleside, Queen Annes County. (U. Md., Ent. Dept.). VIRGINIA - M. femurrubrum nymphs and adults 75-100 per 100 sweeps in King George County field; damage light to moderate. (Allen).

PEANUTS

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ALABAMA - Larvae heavy and widespread in Geneva County; damage evident on stems and in kernels. More serious than in many years in 9 major peanut counties in southeast area. (Smith et al.). Larval damage by this species and Feltia subterranea (granulate cutworm) very heavy in several large fields at Newville, Henry County. (Todd et al.). TEXAS - Medium to heavy and damaging peanuts in Waller County. Numbers fairly widespread in county. (Richardson, Green).

RED-NECKED PEANUTWORM (*Stegasta bosqueella*) - OKLAHOMA - Infested 50 percent of terminals in Greer County. (Okla. Coop. Sur.).

BURROWING STINK BUGS (*Pangaeus* spp.) - ALABAMA - Adults and nymphs very heavy and seriously damaged 7-acre field at Newton, Dale County; field with 3-year history of damage. Controls ineffective in 1968. (Estes et al.).

SPIDER MITES (*Tetranychus* spp.) - OKLAHOMA - Heavy in Perkins area, Payne County. (Okla. Coop. Sur.).

COTTON

BOLL WEEVIL (*Anthonomus grandis*) - SOUTH CAROLINA - Weevil movement means young bolls will require protection at Florence. Larvae infested 0.9-29.7 percent of treated plots and 7-79 percent of untreated plots. Adults per 100 squares ranged 0-5 in treated plots and 0-17 in untreated plots. (Taft et al., Aug. 16). Peak migration passed. (Sparks, Aug. 20). ALABAMA - Continues heavy in central and southern areas; adults emerging from opening bolls. Egg laying heavy; 1-25 punctures noted in half-grown bolls where young weevils plentiful and squares about gone. Punctured squares increasing steadily in northern area; controls widespread in this area. First controls made in some fields in Madison County. Controls completed in some southern areas, especially in drought areas where cotton "cut-out." (McQueen). TENNESSEE - Migration to noninfested western area continues in regularly infested section as most early cotton no longer attractive to weevils. Boll damage heavy in late cotton. Square counts no longer necessary in southern tier of counties. Dry weather caused some mortality. Up to 6 weevils found in one bloom in Hardeman County. (Locke). MISSISSIPPI - Percent punctured squares averaged 7.8 (maximum 67) in 3 of 9 fields checked in delta counties. Infestations increased greatly, up to 91 percent, in test plots not treated past 10-14 days. (Pfrimmer et al.). ARKANSAS - Infested 4,808 (76.1 percent) of fields surveyed. Above treatment level in 1,446 fields. Percent punctured squares increasing in many fields due to decline in squaring rates. Treated 1,196 fields. (Boyer, Barnes). OKLAHOMA - Infestations averaged 24 percent and 54 percent in 2 fields checked in Otter Creek area, Tillman County. Infestations light in most fields, but up to 30 percent in few fields in Jackson County. Moderate in Bryan County and light in Caddo, Kiowa, and Garvin Counties. (Okla. Coop. Sur.). TEXAS - Damaging infestations found in 2 of 7 treated fields and in 4 of 8 untreated fields in McLennan and Falls Counties. Percent punctured squares ranged 2.5-32.5 (average 9) in treated fields and 4-40.5 (average 19.5) in untreated fields. (Cowan et al.). For Boll Weevil in High Plains see page 848.

BOLLWORMS (*Heliothis* spp.) - SOUTH CAROLINA - Larvae infested 0-19.3 percent of treated plots and 0-13.0 percent of untreated plots at Florence. Moths heavy in light trap during period. Collected 1,181 *H. zea* (4,801 to date) and 23 *H. virescens* (73 to date). (Taft et al., Aug. 16). Egg laying continues heavy; larval control excellent. (Sparks, Aug. 20). ALABAMA - Remains about same as last week. Heavier, 15-22 per 100 terminals, in some fields in Marengo and Talladega Counties. (McQueen). TENNESSEE - Serious damage continues over western area. Egg laying ceased in older cotton. Eggs and larvae ranged 1-18 per 100 terminals. More egg laying down in plant than in terminal buds. Damage expected to continue in rank cotton. (Locke). MISSISSIPPI - *H. zea* damaged squares averaged 1.1 (maximum 3.5) percent in delta counties. Flight increased over last week; more eggs found in many fields. (Pfrimmer et al.). ARKANSAS - Eggs and/or larvae in 3,733 (59.1 percent) of fields surveyed. Square damage in 4,161 (65.9 percent) of fields. Above 5 percent damaged squares (recommended treatment level) in 411 (6.5 percent) of fields. Small increase in eggs and larvae but square damage declined further, probably due to effective control and possibly infertile eggs and/or young larvae failing to become established. (Boyer, Barnes). Species determinations by county: Lee, 11 *H. zea* and 1 *H. virescens*; Lincoln, 22 *H. zea* and 3 *H. virescens*. Total to date 188 *H. zea* and 11 *H. virescens*. *H. zea* increased again in light trap in Desha County; 75

moths taken. Treated 840 fields; treated another 1,151 fields for bollworm and boll weevil. (Boyer). OKLAHOMA - Percent *H. zea* boll damage ranged 10-75 in Marshall County, 20-30 in Mangum area, Greer County, and 2-4 in Jackson and Tillman Counties. Generally light in Blaine, Caddo, Kiowa, and Garvin Counties. (Okla. Coop. Sur.). TEXAS - Most cotton past stage for damage in McLennan and Falls Counties. Damaging infestations in few remaining succulent fields. Eggs ranged 1.8-24.1 (average 14.6) and larvae 6-17 (average 11.7) per 100 terminals in 7 treated fields; eggs 1.8-37.5 (average 12.9) and larvae 7.5-21.8 (average 13.1) per 100 terminals in 8 untreated fields. Percent damaged squares ranged 6.7-19.0 (average 10) in treated fields and 8.4-24.2 (average 17.7) in untreated fields. Percent damaged bolls ranged 1.7-9.0 (average 3.6) in 9 treated fields and 4.2-16.5 (average 6.7) in 9 untreated fields. Of larvae previously collected on cotton, 85 percent determined *H. virescens*. (Cowan et al.). Remain light throughout High Plains. Light and scattered in Mitchell, Dawson, Lynn, Crosby, Garza, Martin, Yoakum, and Lubbock Counties. No control reported. (Almand, Aug. 20). NEW MEXICO - *H. zea* infested only occasional bolls in Hidalgo County. (Nielsen). ARIZONA - *H. zea* increasing in Yuma County; some controls applied. Still light in Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

CABBAGE LOOPER (*Trichoplusia ni*) - SOUTH CAROLINA - Numbers generally decreased by virus disease at Florence. Moths greatly increased (1,263) in light traps; total to date 2,783. This increase indicates potential danger. (Taft et al., Aug. 16). TENNESSEE - Foliar damage low in west area; control not needed. Disease more effective than insecticides in heaviest infested fields. (Locke). MISSISSIPPI - Flight heavy in delta counties; larvae noted in most fields. (Pfirmer et al.). TEXAS - Noted in scattered fields in Garza, Yoakum, and Lubbock Counties. (Almand, Aug. 20). Light in 4 fields and heavy in 1 in McLennan and Falls Counties. (Cowan et al.). ARIZONA - Disease aided by heavy rains and high humidity killed many larvae in Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

A NOCTUID MOTH (*Pseudoplusia includens*) - TEXAS - Heavy in Maverick County. (Tapscott). ALABAMA - Larvae "ragging" leaves in many fields in central area; present in Jackson County. (McQueen).

COTTON LEAF PERFORATOR (*Bucculatrix thurberiella*) - ARIZONA - Much damage to cotton in Yuma, Maricopa, and Pinal Counties. Controls very difficult, applied to heavily infested fields. (Ariz. Coop. Sur.).

PLANT BUGS - ARKANSAS - Averaged 40 or more per 100 terminals in 22 fields. Mostly nymphs of *Lygus lineolaris* and *Neurocolpus nubilus* in squares and on young bolls caused concern in extreme northeast area. Most of 63 fields treated in northeast area. (Boyer, Barnes). TEXAS - *Psallus seriatus* noted in Dawson, Martin, Garza, and Yoakum Counties; light to moderate in Floyd and Lubbock Counties. Numbers and damage of little concern at this time except in very young cotton and in cotton which has not fruited. (Almand, Aug. 20). ARIZONA - *Lygus* spp. remained heavy in late-planted fields and destroyed many squares in Maricopa and Pinal Counties. Controls not required. (Ariz. Coop. Sur.).

APHIDS - TENNESSEE - Becoming heavy in rank cotton in some fields in western area. (Locke). TEXAS - *Aphis gossypii* decreasing in Hale County due to parasites and predators. (Almand, Aug. 20).

GREENHOUSE WHITEFLY (*Trialeurodes vaporariorum*) - TEXAS - Heavy in northeast area. Excessive honeydew noted in many fields in Bowie and Red River Counties. Some controls applied. (Lynch, Moody).

SPIDER MITES - TENNESSEE - Damage to late cotton severe; conditions ideal for further increase in untreated fields. Infestations more severe and general in 1968 than in past 15 years in State. (Locke). SOUTH CAROLINA - Numerous heavy infestations in Piedmont counties. (Sparks, Aug. 20). ALABAMA - Damage by mostly *Tetranychus urticae* continues to increase in central and northern areas. Controls difficult. (McQueen). MISSISSIPPI - *T. urticae* decreased some in delta counties due to rains of last week, but increasing again with hot, dry weather.

(Pfrimmer et al.). TEXAS - Tetranychus cinnabarinus heavy in 1 field in Waco area. (Cowan et al.).

TOBACCO

CABBAGE LOOPER (Trichoplusia ni) - MARYLAND - Full-grown larvae caused heavy foliage damage to several acres near Sandgates, St. Marys County. (U. Md., Ent. Dept.).

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - INDIANA - Ranged 4-21 per leaf in fields surveyed in Jefferson County; controls required. (Matthew).

SUGARBEETS

BEEB WEBWORM (Loxostege sticticalis) - COLORADO - Larvae of this species, Spodoptera exigua, and Ceramica picta caused leaf damage in Arkansas Valley; ranged 0-10 per 100 sweeps. (Schweissing).

MISCELLANEOUS FIELD CROPS

BANDED SUNFLOWER MOTH (Phalonia hospes) - NORTH DAKOTA - Larvae of this species and Homocidus electellum (sunflower moth) ranged up to 200 (average 50) per 100 heads on sunflowers in Cass, Traill, Grand Forks, Steele, and Barnes Counties. Fields infested ranged from 35 percent in Grand Forks County to 100 percent in Cass and Barnes Counties; 84 percent of larvae P. hospes. (Brandvik).

SUNFLOWER MAGGOT (Strauzia longipennis) - NORTH DAKOTA - Pupae in sunflower heads in 70 percent of fields examined in Cass, Traill, Grand Forks, Steele, and Barnes Counties; ranged 0-80 (average 26) per 100 heads. (Kaatz).

POTATOES, TOMATOES, PEPPERS

EUROPEAN CORN BORER (Ostrinia nubilalis) - MICHIGAN - Trapped 25 females and 46 males in Lenawee County August 13; weekly total 122. Gradually reduced emergence expected next 14 days. Collected 43 moths during period in Montcalm County; peak collection 29. (Newman). First, second, and third instars infested some peppers in southern area. Control should be underway in northern pepper-growing areas. (Janes, Wells, Aug. 19). NEW JERSEY - Light to moderate in several pepper fields in southern area. Controls still warranted although blacklight trap collections declined past week. (Ins.-Dis. Newsltr.).

CABBAGE LOOPER (Trichoplusia ni) - RHODE ISLAND - Larvae heavy on potatoes in Washington County. (Field et al.). VIRGINIA - Moths continue high in light trap collections on Eastern Shore; larvae severe on peppers, tomatoes, and eggplant. Egg counts very high. Situation will worsen if hot, dry weather continues. (Hofmaster, Aug. 14). COLORADO - Larvae 0-10 per 100 sweeps on tomatoes in Pueblo, Otero, and Prowers Counties. (Schweissing).

NOCTUID MOTHS - NEW JERSEY - Several species increased sharply in blacklight trap collections past week. Controls recommended on potatoes. Heliothis zea larvae light to moderate on tomatoes in southern counties. (Ins.-Dis. Newsltr.).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - NEW JERSEY - Light to moderate on tomatoes in southern counties. (Ins.-Dis. Newsltr.). VIRGINIA - More numerous on potato at this time than since 1947 in Accomack County. (Hofmaster). SOUTH CAROLINA - Damaging late-planted potatoes in gardens in Dillon County; defoliation 50 percent in untreated plots. (Bauer).

TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) - CALIFORNIA - Adults heavy on tomato fruit in plantings at Palermo, Butte County. (Cal. Coop. Rpt.).

PEPPER MAGGOT (*Zonosemata electa*) - NEW JERSEY - Adults trapped on August 15-21: Cedarville, 70 on 4 stickyboards; Salem, 1 on 1 stickyboard; Vineland, 3 on 8 stickyboards. (Ins.-Dis. Newsltr.).

BEANS AND PEAS

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - NEBRASKA - Larvae heavy on field beans in Scotts Bluff, Morrill, and southern Sioux Counties. Controls applied to about 90 percent of fields last 2 weeks. (Hagen). MISSOURI - Damaging beans in northeast area. (Peters).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - MARYLAND - Damage light to 5 percent in 15-acre bean planting near Crumpton, Queen Annes County. (U. Md., Ent. Dept.).

GREEN CLOVERWORM (*Plathypena scabra*) - NEW JERSEY - Larvae averaged 1 per row foot in several lima bean fields near Pole Tavern, Salem County. (Ins.-Dis. Newsltr.).

COLE CROPS

CABBAGE LOOPER (*Trichoplusia ni*) - RHODE ISLAND - Larvae on cabbage in Washington County. (Field et al.). NEW YORK - Very numerous in Suffolk County. (N.Y. Wkly. Rpt., Aug. 19). NEW JERSEY - Buildup rapid on most crucifers; satisfactory control difficult. Blacklight trap collections indicate increasing infestations. (Ins.-Dis. Newsltr.). VIRGINIA - Moths consistently high in light trap collections past 3 weeks on Eastern Shore. Larvae found severe on cucumbers and broccoli August 14; up to 25 eggs per broccoli leaf. Numerous young larvae destroyed by heavy rains in Exmore and Painter area August 9-10. Very little virus noted, but should appear shortly. (Hofmaster). MICHIGAN - Increased sharply at Montcalm County blacklight station. Collected 14 moths August 12; total of 41 August 8-12. (Newman). Very active; immediate controls needed in infested fields. (Janes et al., Aug. 19). WISCONSIN - Damaged untreated cabbage in many counties. (Wis. Ins. Sur.).

IMPORTED CABBAGEWORM (*Pieris rapae*) - WISCONSIN - Damage severe in gardens in few areas; defoliation 50 percent in untreated cabbage garden in northern Dane County. (Wis. Ins. Sur.). MICHIGAN - Very active; immediate controls needed in infested fields. (Janes et al., Aug. 19). RHODE ISLAND - Larvae on cabbage in Newport County; adults active. (Field, Kerr).

FLEA BEETLES - NEW JERSEY - Caused extensive injury to broccoli seedlings near Centerton, Cumberland County. (Ins.-Dis. Newsltr.). DELAWARE - Phyllotreta cruciferae numerous on young crucifers in New Castle County; some damage. (Burbutis).

CUCURBITS

CUCUMBER BEETLES - WISCONSIN - Acalymma vittatum and Diabrotica undecimpunctata howardi numerous and damaging cucumbers in few central areas. (Wis. Ins. Sur.).

MELON APHID (*Aphis gossypii*) - DELAWARE - Continues to increase on cucurbits throughout Kent and Sussex Counties. (Boys, Aug. 22).

GENERAL VEGETABLES

SOFTLEAF MOTHS - NEW JERSEY - Several species increased sharply in blacklight trap collections. Controls recommended on sweetpotatoes. (Ins.-Dis. Newsltr.). MICHIGAN - Crymodes devastator high at all blacklight stations, particularly in Montcalm County with 178 moths. Peltia spp. moths rapidly increasing; totaled 128 in Montcalm County and 110 in Lenawee County August 8-14. Weekly totals for 5 Euxoa spp. high at all 5 stations; ranged from 402 in Montcalm County to 104 in Newaygo County. Cutworms expected to be serious in 1969 if large numbers of Euxoa spp. persist through winter. (Newman).

VARIEGATED CUTWORM (Peridroma saucia) - WYOMING - Increased from 30 July 22-28 to 100 July 29-August 4 in blacklight trap in Goshen County. (Parshall).

ONION THRIPS (Thrips tabaci) - COLORADO - Up to 25 per plant on onions in eastern area. (Johnson, Schweissing).

DECIDUOUS FRUITS AND NUTS

COMBING MOTH (Carpocapsa pomonella) - CALIFORNIA - Medium numbers caused "wormy" apples at Lemon Grove, San Diego County. (Cal. Coop. Rpt.). COLORADO - Moths decreased in sex attractant traps in Mesa County. (Bulla). INDIANA - Trapped 54 males (59 last period) in virgin female traps at Vincennes orchard. (Dolphin, Aug. 19). NEW YORK - Increase in trap captures August 14 indicates summer-brood flight starting; small summer brood expected. (N.Y. Wkly. Rpt.). NEW JERSEY - Trapped 5 in bait jar in Gloucester County August 15-21. (Ins.-Dis. Newsltr.).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - INDIANA - Adults near peak activity, 89 in bait jars at Vincennes; part of flight appears to be fourth generation. (Dolphin, Aug. 19). NEW JERSEY - Trapped 3 in bait jar in Gloucester County August 15-21. (Ins.-Dis. Newsltr.).

LESSER PEACH TREE BORER (Synanthedon pictipes) - INDIANA - Males in virgin female traps at Vincennes orchard increased from 203 to 307 as adults of second generation continued to emerge. (Dolphin, Aug. 19).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - INDIANA - Trapped 356 males (546 last period) in virgin female traps at Vincennes. (Dolphin, Aug. 19).

APPLE MAGGOT (Rhagoletis pomonella) - WISCONSIN - Emergence continued. Trap collections highest during period August 3-20 at Bayfield, Baraboo, and Leland. (Wis. Ins. Sur.). NEW JERSEY - Average count per stickyboard by county August 15-21: Mercer 15, Gloucester 6.7, and Burlington 0. (Ins.-Dis. Newsltr.). NEW YORK - Fly emergence reached low level by August 4. (N.Y. Wkly. Rpt.). CONNECTICUT - False apple lures at Storrs catching 10 or 15 flies per day. Sex ratio close to 1:1; females could cause trouble. Most flies on lures hanging in late apple varieties. (Savos, Aug. 20).

MEALY PLUM APHID (Hyalopteris pruni) - CALIFORNIA - Medium on apricot trees at Meridian, Sutter County. (Cal. Coop. Rpt.).

EUROPEAN RED MITE (Panonychus ulmi) - IOWA - Continued to increase at high rate on apple trees where poor control measures practiced. (Iowa Ins. Sur.). INDIANA - Increased in peach trees at Vincennes due to curtailed spraying during harvest. (Dolphin, Aug. 19). Increased on apple trees at Lafayette, Tippecanoe County, and generally throughout State due to favorable weather. Repeat controls necessary on poorly sprayed bronzed trees in well-sprayed orchards in southeast counties. (Matthew). OHIO - Increased in northeastern area; some bronzing apparent. Up to 30 per leaf on apple trees in untreated control check plots in Wayne County. (Forsythe). DELAWARE - Under control in most commercial apple plantings. (Boys, Aug. 22). CONNECTICUT - Easily found in most orchards. Weather favors development; rapid increase expected. (Savos, Aug. 20).

SPIDER MITES - COLORADO - Tetranychus urticae outbreaks severe in apple orchards in Mesa and Delta Counties; up to 200 per leaf. Foliage injury apparent; 2-3 sprays necessary in many cases. Overwintering forms abundant at base of trees. (Bulla). MINNESOTA - Development of unspecified spider mites appears rapid during recent hot weather; sporadic, heavy outbreaks common in apple orchards in various areas. (Minn. Ins. Rpt.). INDIANA - Tetranychus spp. buildup statewide due to favorable weather; repeat controls required in most orchards. (Matthew). OHIO - T. urticae increased to economic proportions on apple foliage in 2 Columbiana County orchards. (Forsythe). CONNECTICUT - Tetranychus spp. easily found in most orchards. Weather favors development; rapid increase expected. (Savos, Aug. 20).

PECAN WEEVIL (Curculio caryae) - ALABAMA - About 90 percent of nuts shed from 3 large Schley pecan trees in large orchard in Dallas County; feeding punctures on about 40 percent of these nuts. Several adults collected under trees following treatments. (Beers et al.). OKLAHOMA - Averaged 6 per pecan limb in favorable areas in Payne County; none in other areas. Emergence continues in moist bottom land areas and recently cultivated fields. Some emergence noted in Lincoln County. (Okla. Coop. Sur.).

WALNUT CATERPILLAR (Datana integerrima) - OHIO - Defoliated 70 percent of 50-60 percent of walnut trees in area of Preble County (Mooter); defoliated up to 100 percent of roadside walnut and hickory trees in Medina County (Custer, Basinger). ALABAMA - Several hundred larvae feeding on large pecan trees in Lee County. (McQueen).

HICKORY SHUCKWORM (Laspeyresia caryana) - ALABAMA - Young larvae continue to enter pecan shucks throughout southern and central areas; partly responsible for heavy nut "drop." "Drops" noted especially in Lee, Wilcox, Mobile, Baldwin, Crenshaw, and Dale Counties. (Estes et al.).

AMERICAN PLUM BORER (Euzophera semifuneralis) - CALIFORNIA - Heavily damaged young almond trees at Wheatland, Yuba County; larvae feeding under bark and girdling young limbs. Orchard damaged by wind earlier this season. (Cal. Coop. Rpt.).

WALNUT HUSK FLY (Rhagoletis completa) - OREGON - Ranged up to 50 per trap at Medford, Jackson County. (Berry). One in trap at Garden Valley, Douglas County; first fly taken in area this season. One each in 2 traps at Molalla and Estacada, Clackamas County. (Larson). Clackamas County is a new county record. (Westcott).

APHIDS - ALABAMA - Monellia spp. heavy and serious in Lowndes County pecan orchards. (Mathews). CALIFORNIA - M. costalis heavy on pecan trees at Woodland, Yolo County. Adults also on crapemyrtle. Chromaphis juglandicola medium on English walnuts at Woodland, Yolo County. (Cal. Coop. Rpt.).

CITRUS

Citrus Insect Situation in Florida - Mid-August - CITRUS RUST MITE (Phyllocoptruta oleivora) infested 78 percent of groves (norm 56 percent); 64 percent economic (norm 41 percent). Summer population peaked early in August at very high level and much above normal. Heavier on fruit than on leaves. Decrease expected. All districts in high range. TEXAS CITRUS MITE (Eutetranychus banksi) infested 47 percent of groves (norm 46 percent); 26 percent economic (norm 21 percent). Near normal and in moderate range; decrease to low range expected. Highest districts west and central. CITRUS RED MITE (Panonychus citri) infested 39 percent of groves (norm 45 percent); 15 percent economic (norm 24 percent). Below normal and in low range; further decrease expected. Highest district west. BLACK SCALE (Saissetia oleae) infested 79 percent of groves (norm 66 percent); 64 percent economic (norm 44 percent). Still high in all districts but decreasing; expected to drop to moderate range by September. Highest districts central, east, and west. GLOVER SCALE (Lepidosaphes gloverii) infested 61 percent of groves (norm 60 percent); 1 percent economic (norm 18 percent). PURPLE SCALE (L. beckii) infested 42 percent of groves (norm 58 percent); less than 1 percent economic

(norm 4 percent). CHAFF SCALE (*Parlatoria pergandii*) infested 22 percent of groves (norm 54 percent); less than 1 percent economic (norm 5 percent). YELLOW SCALE (*Aonidiella citrina*) infested 50 percent of groves (norm 56 percent); less than 1 percent economic (norm 8 percent). An ARMORED SCALE (*Unaspis citri*) infested 15 percent of groves; 4 percent economic. Except for *U. citri*, preceeding 4 armored scales below normal and in moderate or low range in all districts; little change expected. WTALYBUGS infested 69 percent of groves; 15 percent economic. Population moderate and slightly above normal; decrease expected. WHITEFLIES infested 45 percent of groves; 25 percent economic. Population near normal and moderate; decrease expected. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

A LEAF ROLLER MOTH (*Platynota stultana*) - ARIZONA - Causing serious injury in nurseries, perhaps due to weather; controls required in Yuma County. (Ariz. Coop. Sur.).

CITRUS THRIPS (*Scirtothrips citri*) - ARIZONA - Injured young growth in Yuma County groves. (Ariz. Coop. Sur.).

CITRUS RED MITE (*Panonychus citri*) - CALIFORNIA - Medium on trees at Greenbrae, Marin County. (Cal. Coop. Rpt.).

CITRUS FLAT MITE (*Brevipalpus lewisi*) - ARIZONA - Fruit protection required in Yuma County. (Ariz. Coop. sur.).

SMALL FRUITS

AN APHID (*Capitophorus ribis*) - CALIFORNIA - Heavy on currant plants at Bieber, Lassen County. (Cal. Coop. Rpt.).

SPIDER MITES - MINNESOTA - Development appears rapid in recent hot weather; sporadic, heavy outbreaks common in various areas on strawberry plants. (Minn. Ins. Rpt.).

ORNAMENTALS

ARMORED SCALES - FLORIDA - *Fiorinia theae* found severe on all of 1,300 Chinese holly plants at Leesburg, Lake County, August 14. (Bentley). *Pseudaonidia clavigera* found severe August 16 on 700 of 876 camellia plants at Springhead, Hillsborough County. (Vaughan).

FOREST AND SHADE TREES

SOUTHERN PINE BEETLE (*Dendroctonus frontalis*) - VIRGINIA - No increase in beetle activity evident except in Mecklenburg County where 6 new infestations reported during July. (For. Pest Sur. Rpt.).

GELECHIID MOTHS - MICHIGAN - *Exoteleia nepheos* collected at Jenison, Ottawa County, for third known infestation in State. Noted at West Olive, Ottawa County, this summer and at Bellville, Wayne County, in 1966. (Wallner, Aug. 19). MINNESOTA - *Recurvaria* sp. heavily infested many spruce trees in home plantings and some in nurseries. (Minn. Ins. Rpt.).

COOLEY SPRUCE GALL APHID (*Adelges cooleyi*) - WYOMING - Heavy on Colorado spruce at Laramie, Albany County; emergence of early August continues. (Burkhardt).

AN ARMORED SCALE (*Fiorinia externa*) - MARYLAND - Found on hemlock planting near Chestertown, Kent County, August 19, 1968. Collected and det. by W.T. Garrett. This is a new county record. (U. Md., Ent. Dept.).

SPRUCE BUD SCALE (*Physokermes piceae*) - CALIFORNIA - Heavy on spruce trees at Greenbrae, Marin County. (Cal. Coop. Rpt.).

ASIATIC OAK WEEVIL (*Cyrtopistomus castaneus*) - ARKANSAS - Collected on trees and shrubs in Garland County July 22 by G. Barnes for new State record. Det. by R.E. Warner. (Rouse, Boyer). ALABAMA - Adults heavy and annoying about houses in Cleburne County; no damage to trees or shrubs. (Ventress).

SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*) - NEVADA - Infestation and damage on elms above normal in Clark County, especially at Henderson. (Earnist).

ELM LEAF BEETLE (*Pyrrhalta luteola*) - UTAH - More damaging at Fillmore, Millard County, than in western part of county. (Knowlton, Aug. 20). TEXAS - Larvae still heavy, severely damaging elms in Upton County. (Neeb).

LOCUST LEAF MINER (*Xenochalepus dorsalis*) - VIRGINIA - Moderate to heavy on locust trees in Montgomery, Roanoke, Botetourt, Bedford, and Campbell Counties. (Allen, Aug. 13).

FALL WEBWORM (*Hyphantria cunea*) - NEW MEXICO - Minor problem on shade trees at Santa Fe, Santa Fe County. (Heninger). WISCONSIN - Caused slight damage to variety of trees in several counties. (Wis. Ins. Sur.). OHIO - Webbing common through central to eastern counties. Defoliation of various deciduous trees heavy this year. Larval numbers appear near seasonal peak. (Rose).

MIMOSA WEBWORM (*Homadaula anisocentra*) - IOWA - Collected on honeylocust south of Kelly, Story County, for a new county record. (Iowa Ins. Sur.). OKLAHOMA - Leaf damage ranged 5-85 (average 40) percent on several mimosa trees at Inola, Rogers County. Heavy on mimosa in Mayes County. (Okla. Coop. Sur.). ALABAMA - Heavy, damaged about 25 percent of leaves on several mimosa trees at trailer court in Decatur, Morgan County. (Cain). WEST VIRGINIA - Common on honeylocust in north-eastern counties. (Weaver, Aug. 16).

BIRCH LEAF MINER (*Fenusa pusilla*) - WISCONSIN - Damage heavy in Marathon, Sheboygan, Calumet, Portage, and portions of Dane County. Less numerous but damaging in Chippewa and Eau Claire County area. (Wis. Ins. Sur.).

A LEAFHOPPER (*Japananus hyalinus*) - OREGON - Late instars and adults common on ornamental maple at Corvallis, Benton County, August 5. Det. by P.W. Oman. Previously recorded in State from Portland only. (Oman). This is a new county record. (Westcott).

PSYLLIDS - CALIFORNIA - *Psylla uncatoides* heavy on acacia trees at Seaside, Monterey County. One of worst pests of acacia in State. *Trioza alacris* nymphs, adults, and honeydew drip heavy; severely deformed foliage on bay trees on Governor's Mansion grounds at Sacramento, Sacramento County. (Cal. Coop. Rpt.).

MAN AND ANIMALS

MOSQUITOES - NEW JERSEY - Eastern viral encephalitis present in horses in central and southern counties. Owners throughout State urged to immunize all equines immediately. Spraying for mosquitoes urged. (Ins.-Dis. Newsltr., Aug. 16).
MARYLAND - Eastern viral encephalitis found in pheasants in Worcester and Wicomico Counties. Mosquito annoyance to man light. (U. Md., Ent. Dept.).
TENNESSEE - Mosquitoes very troublesome at dusk in many eastern areas. (Quillin).
MICHIGAN - Continued at high level. Fogging becoming effective. (Janes, Aug. 19).
WISCONSIN - Hot weather increased activity. Biting not as bothersome as earlier in summer, but sometimes severe in localized areas near marshes and woods. Aedes vexans most numerous biter and A. sticticus second, according to collection made on far west side of Madison. Frequent rains and warm weather favored breeding; population should continue at about present level or increase slightly in next 2 weeks. Severely annoyed cattle in some areas of Jefferson County. (Wis. Ins. Sur.).
MINNESOTA - Catches in 16 light traps decreased to 6,940 females and 6,450 males August 10-16 with 5,368 A. vexans, 132 Culex tarsalis, and 331 (unusually high) Culiseta morsitans. Of 775 larval collections August 11-17, A. vexans in 511, Culex tarsalis in 227, C. tarsalis in 96, C. restuans in 71, and C. pipiens in 36. High pond levels during summer encouraged permanent water breeders. A. vexans, A. trivittatus, and A. cinereus dominated evening and day-time bite collections August 11-17. Light trap catches and annoyance increased greatly during hot, humid weather of August 18-23; many new adults. This brood will assure many areas a substantial number of mosquitoes for Labor Day weekend. (Minn. Ins. Rpt.).
UTAH - Continue moderate in Delta, Deseret, and Abraham area of western Millard County. (Knowlton, Aug. 20).

SCREW-WORM (Cochliomyia hominivorax) - Total of 221 cases reported in U.S. August 11-17 as follows: **TEXAS** - Aransas 1, Atascosa 12, Bee 11, Brewster 8, Brooks 17, Crockett 7, Culberson 1, De Witt 5, Duval 1, Edwards 2, Frio 1, Glasscock 1, Goliad 4, Hidalgo 5, Howard 1, Jeff Davis 4, Jim Hogg 14, Jim Wells 4, Karnes 5, Kerr 2, Kenedy 4, Kimble 5, Kleberg 2, Live Oak 6, Mason 4, Maverick 1, Midland 1, Nueces 3, Pecos 19, Presidio 1, Real 2, Reeves 1, Refugio 3, San Patricio 4, Starr 14, Terrell 19, Uvalde 2, Val Verde 10, Willacy 1, Wilson 3; **ARIZONA** - Greenlee 1, Yavapai 4; **CALIFORNIA** - San Diego 1; **NEW MEXICO** - Grant 1, Hidalgo 3. Sterile screw-worm flies released: Texas 74,618,000; New Mexico 1,280,000; Arizona 8,360,000; Mexico 67,390,000. (Anim. Health Div.).

FACE FLY (Musca autumnalis) - **OREGON** - Averaged 5-10 per face in small herds near Brownboro, Jackson County. (Westcott). **IDAHO** - Annoying range and pasture cattle in several widely separated areas during late July and early August. Not economic in many areas during summer of 1968. Some hot spots troublesome by mid-June and persisted during July and early August. Cool, wet weather last 2 weeks will depress numbers to noneconomic levels throughout State. Adults will be searching for hibernation sites next few weeks. (O'Keefe). **SOUTH DAKOTA** - Up to 25-30 per face on cattle south of Geddes, Charles Mix County. Averaged 5 per face on untreated cattle in northwestern Yankton County. (Balsbaugh, Jones).
MISSOURI - Averaged 3.8, 10.6, 2.5, 0.2, 0.8, 3.5, and 6.8 per face (10-cow samples) on 7 central area herds. (Thomas). **WISCONSIN** - Slightly to moderately annoyed cattle in most areas. (Wis. Ins. Sur.). **MICHIGAN** - Particularly numerous because of rains. (Janes, Aug. 19). **OHIO** - High in all areas as indicated by tightly clustered cattle throughout State past 2 weeks. (Rose). **WEST VIRGINIA** - Ranged 15-40 (averaged 26) per face on adult cattle. (Dorsey, Aug. 16).

HOUSE FLY (Musca domestica) - **UTAH** - Troublesome in most central and eastern communities and on farms. (Knowlton, Aug. 20). **TENNESSEE** - Very annoying in houses and around patios in many areas. (Quillin). **WISCONSIN** - Numerous around homes, restaurants, and barns in all areas. (Wis. Ins. Sur.). **MICHIGAN** - Particularly numerous because of rains. (Janes, Aug. 19). **RHODE ISLAND** - All stages heavy in chicken houses in Washington County. (Field).

LITTLE HOUSE FLY (Fannia canicularis) - **RHODE ISLAND** - Heavy in Washington County chicken houses. (Field).

HORN FLY (*Haematobia irritans*) - TEXAS - Heavy on Crockett County livestock. (Neeb). OKLAHOMA - Heavy on cattle in Garvin and Mayes Counties; moderate in Ellis and Kiowa Counties. (Okla. Coop. Sur.). MISSOURI - Averaged 161.0, 557.5, 362.5, 227.0, 220.0, 0.7, and 229.8 per head (10-cow samples) on 7 central area herds. (Thomas). WISCONSIN - Severely annoyed cattle in Jefferson County; annoyed cattle slightly to moderately in most other counties. (Wis. Ins. Sur.). MICHIGAN - Particularly numerous because of rains. (Janes, Aug. 19). WEST VIRGINIA - Ranged 20-100 (averaged 49) per square foot of withers on adult cattle. (Dorsey, Aug. 16).

STABLE FLY (*Stomoxys calcitrans*) - WISCONSIN - Annoyance to cattle moderate to severe in most sections. Hot weather increased activity and contributed to discomfort of cattle. (Wis. Ins. Sur.).

TABANID FLIES - UTAH - Annoyance to livestock in Uintah and Duchesne Counties decreasing. Troublesome in many areas this season. (Knowlton, Aug. 20). TEXAS - *Tabanus* sp. heavy on livestock in salt marsh area. (Sanders). OKLAHOMA - *Tabanus* spp. heavy on livestock in Choctaw County. *T. atratus* up to 40 per head in favorable areas of Johnston County. (Okla. Coop. Sur.). WISCONSIN - Deer flies continued to annoy cattle and humans in many locations. (Wis. Ins. Sur.).

BROWN RECLUSE SPIDER (*Loxosceles reclusa*) - ALABAMA - Live specimen collected from bathtub in home at Sheffield, Colbert County. (Baswell, Foster).

HOUSEHOLDS AND STRUCTURES

ORIENTAL WOOD BORER (*Heterobostrychus aequalis*) - FLORIDA - Total of 2 larvae, 1 pupa, and 13 adults taken from oak wood flooring at construction company in Coral Gables, Dade County, June 25. (Weaver, Creamer).

A LONG-HORNED BEETLE (*Xylotrechus nauticus*) - CALIFORNIA - Adults heavy in several buildings at Santa Maria, Santa Barbara County. (Cal. Coop. Rpt.).

AN ANT (*Paratrechina melanderi arenivaga*) - CALIFORNIA - Infested residence at Redding, Shasta County, for a new county record. (Cal. Coop. Rpt.).

MISCELLANEOUS WILD PLANTS

A PLANT BUG (*Melanotrachus virescens*) - OREGON - Specimens collected in Tillamook and Hood River Counties in 1961. This is a new state record. Collected on Scotch broom at Reedsport, Douglas County, August 3, 1968, for a new county record. All determinations made by J.D. Lattin. Species reportedly abundant at Vancouver in British Columbia, Canada, in 1959. (Lattin, Westcott).

BENEFICIAL INSECTS

LADY BEETLES - UTAH - Effectively controlled spotted alfalfa aphid and pea aphid in many alfalfa hay and seed fields in greater Delta area of Millard County. (Knowlton, Aug. 20). WYOMING - Adults and larvae averaged 12 per 100 sweeps on Goshen and Laramie County alfalfa. (Parshall).

GREEN LACEWINGS (*Chrysopa* spp.) - WYOMING - Adults ranged 4-33 (averaged 15) per 100 sweeps on Goshen and Laramie County alfalfa. (Parshall).

DAMSEL BUGS (*Nabis* spp.) - WYOMING - Nymphs and adults ranged 9-190 (average 61) per 100 sweeps on Goshen and Laramie County alfalfa. (Parshall).

BIG-EYED BUGS (*Geocoris* spp.) - UTAH - Very numerous, often 50-100 in 10 sweeps; effectively controlled spotted alfalfa aphid and pea aphid in large alfalfa field at Delta, Millard County. (Knowlton, Aug. 20).

A BRACONID (Apanteles congregatus) - VIRGINIA - Heavily parasitized Manduca spp. (Hornworms) in 10-acre tomato field in Westmoreland County. Nearly every plant with 2 or more hornworms. About 60 percent of hornworms parasitized. (Allen, Ptucha).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Traps checked in El Paso area with negative results for July. Additional traps set from El Paso to north of Presidio; no "native" weevils found in these traps. One larva found north of Presidio. Additional traps placed in High Plains area. Efforts being made to coordinate catches and field survey in order to determine area to be treated. (PPC South. Reg.). In High Plains, numbers and damage light in some fields in Martin County. Numbers light to medium in parts of Mitchell and Garza Counties. Infested 90+ percent of fields surveyed in Kent County; economic in about 25 percent of fields surveyed. Numbers and damage increasing. Generally increasing, infested almost all fields in Dickens County. (Almand, Aug. 20). See page 838 for Boll Weevil in other areas.

CARIBBEAN FRUIT FLY (Anastrepha suspensa) - FLORIDA - Trapped 2 males and 8 females at St. Augustine, St. Johns County, August 19 for a new county record. (Taylor). Larvae taken from several varieties of mango in dooryards at Miami, Dade County, during recent weeks. (DeHaven). Larvae infested pear fruit at or near Mt. Dora, Lake County, July 25. (Williams). High in trap collections in Broward County; much fewer in traps in Dade County. (PPC South. Reg., July Rpt.).

CITRUS BLACKFLY (Aleurocanthus woglumi) - MEXICO - Biological Control Zone - Inspections made of 52,838 trees on 826 acres in municipios of Hidalgo, Guemez, and Padilla, Tamaulipas; 56 trees on 180 acres found infested at Hualahuises. Chemical Control Zone - Inspections made of 35,275 trees on 1,776 properties with 593 acres in seven municipios of Nuevo Leon and eight municipios in Tamaulipas. Inspections in northern Tamaulipas negative. Total of 347 trees found infested on 13 properties with 430 acres in municipios Linares and Hualahuises in Nuevo Leon. Inspections negative on 704 trees on 45 properties in municipios San Luis R.C. and Hermosillo, Sonora. (PPC Mex. Reg., July Rpt.).

EUROPEAN CHAFER (Amphimallon majalis) - NEW YORK - Collected in Orange (July 5), Ulster (July 18), Chautauqua (July 9), and Steuben (July 16) Counties for new county records. Extensions reported in 8 counties. (PPC East. Reg.).

GRASSHOPPERS - TEXAS - Total of 42,919 acres treated in east-central Briscoe and northeast Floyd Counties July 9-14; control results excellent. (PPC South. Reg.). Hippiscus sp. heavy on Coastal Bermuda grass in Pecos County. (Neeb). IOWA - Melanoplus femurrubrum adults averaged 9 per square yard in 4 pastures in Lucas and Monroe Counties. (Iowa Ins. Sur.). WISCONSIN - Low on all croplands. Mixed populations of up to about 50 (average less than 20) per square yard on roadsides and grass fields. Late instars and adults of M. femurrubrum common; Dissosteira carolina, katydids, and Chorthippus sp. also common in grass. M. femurrubrum feeding damage very slight in margins of few cornfields. (Wis. Ins. Sur.). MINNESOTA - Adult survey started. Economic (10 or more per square yard) in widely scattered areas of Carver, Sherburne, Isanti, Morrison, Todd, Cass, Crow Wing, Chippewa, Swift, Big Stone, Hubbard, Otter Tail, and Becker Counties. Severe feeding damage (36-38 per square yard) on grassland in Otter Tail, Becker, and Hubbard Counties. Margin feeding on soybeans becoming severe in some Chippewa and Swift County fields. Low so far in southwest district. (Minn. Ins. Rpt.). NORTH DAKOTA - Adult survey completed in State. Infestations below 1967 level and lightest since 1961. Light only in parts of Cass, Richland, Ransom, Grant, Morton, and Emons Counties. Generally noneconomic in remainder of State; occasionally light to threatening in alfalfa and soil bank fields. (Brandvik). MONTANA - Economic in Rosebud, Powder River, Yellowstone, and Stillwater Counties; damage minimized due to excellent stands of range grass. Damaged 10 percent of grama and western wheatgrass in southern Rosebud County. Heavy in parts of Custer National

Forest and Northern Cheyenne Indian Reservation during July; no controls applied. (PPC West. Reg.).

GYPSY MOTH (*Porthetria dispar*) - PENNSYLVANIA - Taken in Lebanon (July 25), Lehigh (July 26), Montgomery (July 29), and Lancaster (August 1) Counties for new county records. Moths recovered in Berks, Bucks, Carbon, Chester, Luzerne, Monroe, Northampton, Pike, Schuylkill, and Wayne Counties. (PPC East. Reg.).

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - FLORIDA - Adults taken from garbage can and house at Winter Haven, Polk County, August 15. (Schmidt). GEORGIA - Aerially treated 291,847 acres during July. LOUISIANA - Aerial treatment completed on 691,600 acres in Shreveport area July 25; about 29,000 acres treated by farmers during July. TEXAS - Aerial treatment completed July 25 on 45,904 acres in Harrison County and on 77,136 acres in Panola County. (PPC South. Reg.).

JAPANESE BEETLE (*Popillia japonica*) - SOUTH CAROLINA - Collected for first time in Lancaster County June 29 and Anderson County July 17. NORTH CAROLINA - Few heavy infestations in Lumberton district. (PPC South. Reg.). VIRGINIA - Swept 25 per 100 sweeps in New Kent County soybean field. (Allen, Aug. 14). MARYLAND - Adults damaged about 20 percent of 65-acre soybean stand near Sudlersville, Queen Annes County. (U. Md., Ent. Dept.). NEW JERSEY - High on ornamentals at Kendall Park, Somerset County. (Ins.-Dis. Newsltr.). OHIO - Collected in Putnam County July 22, 1968, for a new county record. KENTUCKY - Collected in Grant (July 8), Christian (July 12), Leslie (July 18), and Menifee (August 12) Counties for new county records. (PPC Cent. Reg.). INDIANA - Collected in Lawrence (July 22), Hendricks (July 24), and Tipton (August 19) Counties for new county records. (PPC).

MEXICAN FRUIT FLY (*Anastrepha ludens*) - ARIZONA - Trapping continued during July in Pima and Santa Cruz Counties; no suspicious specimens recovered. (PPC West. Reg., July Rpt.). MEXICO - In municipio Tijuana, Baja California, 1,278 inspections made of 350 traps. Marked sterile flies trapped totaled 4,406 females and 2,863 males. Total of 9 "native" flies (6 females and 3 males) taken this season as of July 31. Trapping for *A. ludens* negative in municipios Tecate and Ensenada, Baja California. (PPC Mex. Reg.).

PINK BOLLWORM (*Pectinophora gossypiella*) - CALIFORNIA - In Imperial County: Total of 2,945 moths trapped in July in Imperial Valley; total to date 5,555. Boll infestations averaged 16.8 percent, above normal for time of year. Trapped 144 moths during July in Bard Valley; total to date 185. Boll infestations nearing 9 percent. In Riverside County: Moth collections and boll infestations increased sharply in July in Palo Verde Valley; 4,319 moths trapped, boll infestations averaged 8-23 percent. Trapped 346 moths during July in Coachella Valley; total to date 359. Boll infestations ranged from trace to 2.2 percent. In Kern County: Bloom survey begun June 24, completed July 15. Blooms randomly checked on 37,254 acres. Total of 21,000 acres surveyed since July 16. Inspected 47,477 bolls throughout survey area during first 2-week period. (PPC West. Reg.). NEVADA - Total of 6 males collected in sex lure traps in Moapa Valley, Clark County, August 8 for first time in 1968. Additional males collected August 12 (2), August 14 (1), and August 19 (2). Cotton not grown in Moapa Valley in 1967 and all volunteer plants plowed under; about 40 acres cultivated in 1968. Adult surveys continue negative in Pahrump Valley, Nye County. (Bell, Yamashita). ARIZONA - Continued problem in Yuma County in untreated and some treated fields. Infestations spotted in Maricopa County. Still low in Pinal County. Exit holes ranged 8-10 per 100 bolls in Graham County. (Ariz. Coop. Sur.). NEW MEXICO - No larvae found during green boll inspections in Animas Valley and Virden Valley, Hidalgo County; 300 bolls examined. (Nielsen). TEXAS - Very little infestation during bloom and green boll inspections throughout southeastern and east-central areas; negative during limited lint cleaner inspections in Rio Grande Valley. (PPC South. Reg., July Rpt.).

SOIL-BEARING CYST NEMATODE (*Heterodera glycines*) - ARKANSAS - Collected in Conway County August 14, 1968, for a new county record. (PPC South. Reg.). TENNESSEE - Taken in Henderson County August 20 and Hardin County August 21 for new county records. (PPC). NORTH CAROLINA - Damage severe in many fields; especially heavy at Elizabeth City. (PPC South. Reg., July Rpt.).

SWEETPOTATO WEEVIL (*Cylas formicarius elegantulus*) - LOUISIANA - Collected at Gilbert, Franklin Parish, July 9, 1968, for a new parish record. Reported for first time in many years in light trap in St. Tammany Parish. (PPC South. Reg.).

WHITE-FRINGED BEETLES (*Graphognathus* spp.) - LOUISIANA - *G. peregrinus* collected in Calcasieu Parish August 7 and in Evangeline Parish August 15 for new parish records. MISSISSIPPI - *G. peregrinus* collected in Lowndes County August 8 and in Clay County August 20 for new county records. (PPC). VIRGINIA - Two new finds made in city of Norfolk and one in city of Hampton; both adjacent to previously infested areas. (PPC East. Reg., July Rpt.).

HAWAII INSECT REPORT

Corn - TUMID SPIDER MITE (*Tetranychus tumidus*) remains heavy in all sweet corn fields on Oahu; problem during harvest.. (Funasaki).

Turf, Pasture - Adults of a GRASS WEBWORM (*Herpetogramma licarsisalis*) heavy in spots on Kikuyu grass and other grasses near Hana and around lights at Makawao, Maui; larvae generally light. Parasitized eggs and larval parasites common in many areas. (Miyahira).

General Vegetables - BEAN FLY (*Melanagromyza phaseoli*) larvae generally light in seedling beans on Oahu due to removal and destruction of heavily infested seedlings and/or increased controls. Larvae light to medium on leaf petioles and adults light on foliage of older long beans and snap beans in scattered areas. (Funasaki). LEAF MINER FLIES (*Liriomyza* spp.) and a SPIDER MITE, (*Tetranychus cinnabarinus*) remain severe on snap beans, tomatoes, and cucumbers in all lowland areas on Oahu. Generally light to medium on eggplant, daikon, long beans, and watermelon. (Sato, Yamamoto).

Fruit Trees - CHINESE ROSE BEETLE (*Adoretus sinicus*) adult foliar damage heavy on 30 plots of rose, grape, and apple at Makawao and Pukalani, Maui. (Miyahira). COTTONY-CUSHION SCALE (*Icerya purchasi*) moderate to heavy on mulberry at Waiakea, Hawaii Island. (Yamayoshi).

Ornamentals - Adults of a PLATASPID BUG (*Coptosoma xanthogramma*) remain heavy with numerous eggs laid on foliage of various ornamental plants at Poipu, Kauai. *Trissolcus* sp. (a scelionid wasp) parasitized 80 percent of eggs in area. In Wailua, Maui, eggs and adults of *C. xanthogramma* heavy on terminals of fig; adults covered mature and immature fruits and leaf stems; eggs abundant on leaves. (Sugawa, Miyahira).

Miscellaneous Insects - Nymphs and adults of a RHOPALID BUG (*Jadera haematoloma*) remain heavy on balloon vine (a weed) near airport and Waipahu, Oahu. Surveys negative in other areas. (Funasaki).

Weather continued from page 830.
seasonably hot weather persisted from the central and southern Great Plains to the Atlantic Ocean. Pickstown, South Dakota, registered 100° or higher on several afternoons and maximums at Columbia, South Carolina, averaged 101°. Last week was the hottest week of the year in South Carolina, the hottest since mid-June 1966 in Kentucky, the hottest since 1955 in Pennsylvania, and since 1954 in North Carolina. Dew point temperatures exceeded 70° over much of the Central and East. The persistence of the combination of high temperature and high humidity made the weather especially uncomfortable to the people whose work kept them out of doors. The front moved across the East over the weekend and temperature and humidity dropped to comfortable levels. (Summary supplied by Environmental Data Service, ESSA.).

INSECT DETECTION

New State Records

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) - ARKANSAS - Collected in Garland County July 22, 1968, by G. Barnes. Det. by R.E. Warner. (p. 845).

A PLANT BUG (Melanotrichus virescens) - OREGON - First collected in 1961 in Tillamook and Hood River Counties. Det. by J.D. Lattin. (p. 847).

New County and Parish Records

WESTERN CORN ROOTWORM (Diabrotica virgifera) - ILLINOIS - Logan, Mason, Adams, and De Kalb Counties. (p. 833).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - NEBRASKA - Clay, Polk, Platte, and Greeley Counties. (p. 834).

MEADOW SPITTLEBUG (Philaenus spumarius) - VIRGINIA - Stafford, King George, Westmoreland, Richmond, Essex, King and Queen, and King William Counties. MISSOURI - Lincoln County. (p. 835).

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) - MISSOURI - Jefferson County. (p. 836).

PEA LEAF WEEVIL (Sitona lineatus) - OREGON - Klamath County. (p. 836).

WALNUT HUSK FLY (Rhagoletis completa) - OREGON - Clackamas County. (p. 843).

MIMOSA WEBWORM (Homadaula anisocentra) - IOWA - Story County. (p. 845).

AN ARMORED SCALE (Fiorinia externa) - MARYLAND - Kent County. (p. 845).

A LEAFHOPPER (Japananus hyalinus) - OREGON - Benton County. (p. 845).

AN ANT (Paratrechina melanderi arenivaga) - CALIFORNIA - Shasta County. (p. 847).

A PLANT BUG (Melanotrichus virescens) - OREGON - Douglas County. (p. 847).

CARIBBEAN FRUIT FLY (Anastrepha suspensa) - FLORIDA - St. Johns County. (p. 848).

EUROPEAN CHAFER (Amphimallon majalis) - NEW YORK - Orange, Ulster, Chautauqua, and Steuben Counties. (p. 848).

GYPSY MOTH (Porthetria dispar) - PENNSYLVANIA - Lebanon, Lehigh, Montgomery, and Lancaster Counties. (p. 849).

JAPANESE BEETLE (Popillia japonica) - SOUTH CAROLINA - Lancaster and Anderson Counties. OHIO - Putnam County. KENTUCKY - Grant, Christian, Leslie and Menifee Counties. INDIANA - Lawrence, Hendricks, and Tipton Counties. (p. 849).

SOYBEAN CYST NEMATODE (Heterodera glycines) - TENNESSEE - Henderson and Hardin Counties. ARKANSAS - Conway County. (p. 850).

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) - LOUISIANA - Franklin Parish. (p. 850).

WHITE-FRINGED BEETLES (Graphognathus spp.) - SOUTH CAROLINA - G. leucoloma fecundus in Dorchester County July 8, 1968. Serious damage reported in CEIR 18(30):712. (PPC). LOUISIANA - G. peregrinus in Calcasieu and Evangeline Parishes. MISSISSIPPI - G. peregrinus in Lowndes and Clay Counties. (p. 850).

LIGHT TRAP COLLECTIONS

	Locality	Date	Time	Specimen	Length	Wing	Tail	Legs	Weight	Sex	Age	Notes
MISSISSIPPI	Staneville	8/17-23		2BL	15							
MISSOURI	Portageville	8/17-23			4							
NW JERSEY												
	Waco	8/15-21		BL	39							
	Plainsboro	8/15-21		BL	3							
	Seabrook	8/15-21		BL	207							
NORTH DAKOTA												
	Fargo	8/22										
OHIO												
	Milliard	8/15-21		BL	39							
	Woster	8/15-21		BL	7							
SOUTH DAKOTA												
	Brookings	8/16-22		BL								
TEXAS												
	Waco	8/17-23			24							
WISCONSIN												
	Madison	8/15-20		BL	13							

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September 6, 1968

Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

All reports and inquiries pertaining to this release, including the mailing list, should be sent to:

Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG heavy to severe on sorghum in many areas of California; infestation continues in some areas of western Oklahoma. CORN EARWORM larvae severe on corn and soybeans in South Carolina; increasing on soybeans in southern Alabama; moths unusually heavy throughout Wisconsin. (pp. 855-856).

EUROPEAN CORN BORER threat to sweet corn heaviest in 17 years in Hudson Valley of New York; exceptionally heavy in corn throughout Maryland. (p. 856).

GREEN CLOVERWORM incidence highest in many years on soybeans and beans in Wisconsin. (pp. 860, 863).

BOLL WEEVIL widespread and generally heavy throughout northern Alabama. BOLLWORM larvae and moth flights increasing in northern Alabama. (p. 861). CABBAGE LOOPER continues heavy in cotton in areas of Alabama and Mississippi. COTTON LEAF PERFORATOR severe on cotton in Imperial County, California. SPIDER MITE damage severe on cotton in western Tennessee. (p. 862).

CODLING MOTH damage heavy on pears and apples in San Juan County, New Mexico; major adult flight in progress at Vincennes, Indiana. (p. 864).

Total of 208 SCREW-WORM cases reported in southwest U.S. August 25-31. FACE FLY generally heavy on cattle in 3 counties of northern California. (p. 867).

GRASSHOPPERS moderate to severe on alfalfa and other forage legumes in northwest Missouri. (p. 869).

Detection

New State records include WESTERN CORN ROOTWORM in Indiana (p. 858) and a MEALYBUG in Maryland (p. 866).

CALICO SCALE reported for first time in District of Columbia. (p. 867).

CEREAL LEAF BEETLE found in 3 additional new counties in eastern Canada. (p. 871).

For new county and island records see page 871.

Special Report

Witchweed Quarantine Map. Centerfold.

Reports in this issue are for week ending August 30 unless otherwise indicated.

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WEATHER BUREAU'S 30-DAY OUTLOOK

SEPTEMBER 1968

The Weather Bureau's 30-day outlook is for temperatures to average above normal over the South and portions of the Ohio Valley. Below normal values are expected from the northern and central Plains to the Southwest, and also in the Northeast. Near normal temperatures are in prospect elsewhere. Precipitation is expected to exceed normal over a wide area from the Pacific Northwest through the Rockies and Plains to the Great Lakes region. Subnormal totals are expected in the Southeast and the Far Southwest, while near normal amounts are in prospect in unspecified areas.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$5.00 a year. For weather of the week see page 865.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

GREENBUG (*Schizaphis graminum* (In broad sense))* - OKLAHOMA - Ranged 100-500 per plant on sorghum in Ellis County; moderate in Tillman County and light in Cimarron County. (Okla. Coop. Sur.). NEBRASKA - Trace on volunteer wheat and rye in southwest district. (Keith, Rai). Destroyed ryefield in Dawson County. (Pruess). Occasional colonies on corn leaves in Boone County. (Roselle, Aug. 23). COLORADO - Increasing on corn in Morgan County; ranged 0-400 per leaf on mostly lower leaves. Damage very light. (Johnson). WYOMING - Averages ranged 3-124 per row foot in oats in Fremont, Big Horn, and Park Counties and from less than 1 to 170 per row foot in 4 barley fields in Fremont and Park Counties. Parasitized aphids in all fields checked. (Parshall). CALIFORNIA - Heavy to severe on sorghum in many areas of State. Heavy on sorghum at Williams, Colusa County, and at Orland, Glenn County. Abundant on lower parts of plants. (Cal. Coop. Rpt.).

ARMYWORM (*Pseudaletia unipuncta*) - MARYLAND - Moths averaged 11+ per night in blacklight trap collections at Centreville, Queen Annes County. (U. Md., Ent. Dept.). NEBRASKA - Few larvae feeding on corn ear tips in Fillmore County. (Keith).

BET LEAFHOPPER (*Circulifer tenellus*) - CALIFORNIA - Crop damage survey conducted in Sacramento, Butte, Colusa, Yolo, and Sutter Counties. Curly top damage one percent or less in sugarbeets and tomatoes. (Cal. Coop. Rpt.).

CORN EARWORM (*Heliothis zea*) - RHODE ISLAND - Moderate on corn in Washington County. (Kerr, Field). NEW YORK - Absent from sweet corn ears in Hudson Valley since August 2. No moths taken in trap at Poughkeepsie since August 26; two moths trapped at Hurley August 23. Infestation in 1968 lightest ever seen, according to observer. Larvae expected to increase slowly, but to remain at relatively low level rest of season. (N.Y. Wkly. Rpt.). NEW JERSEY - Moths continue plentiful in blacklight traps in State. (Ins.-Dis. Newsltr.). DELAWARE - Larvae common on Kent County lima beans. (Boys, Kelsey). MARYLAND - Moths averaged 6 per night in blacklight trap collections at Centreville, Queen Annes County. Larvae ranged 4-5 per 10 corn ears near Fallston, Harford County. Larvae remain light in corn generally. (U. Md., Ent. Dept.). SOUTH CAROLINA - Larvae severe on corn in all southern counties. Severe in soybean fields where pods have not formed in Newberry, Edgefield, Richland, and Aiken Counties; stripping blooms and feeding on foliage. (Thomas, Aug. 28). OHIO - Infestations generally less than 10 percent in cornfields in northwestern and western counties. (Rose). INDIANA - Moths increased markedly in light traps in Gibson, Porter, Jennings, and Lawrence Counties and at Indianapolis, Marion County; highest count 76 at Johnson, Gibson County. (Huber). MICHIGAN - First moths collected August 20-21 at Lenawee County blacklight station. No additional catches made since. Controls expected on sweet corn immediately. (Janes, Newman). WISCONSIN - Moths unusually heavy in blacklight traps throughout State. Sufficient acreage of late sweet corn present to warrant concern, especially since controls ineffective. Heaviest flight this early in season in past 12 years in Washington County. Total of 110 moths caught in Iowa County August 12-25. Larvae not very common in corn ears as yet; few feeding in tobacco. Damage expected on late sweet corn plantings. (Wis. Ins. Sur.).

NEBRASKA - Heavy, infested 80-90 percent of corn ears in fields checked in Nemaha County. (Roselle). KANSAS - Ear infestations ranged 15-35 percent in corn in Pottawatomie, Jackson, Jefferson, Leavenworth, Shawnee, and Douglas Counties. Infestations ranged 3-12 percent in sorghum heads in Marion, McPherson, and Harvey Counties. (Simpson). MISSOURI - Full-grown larvae infested 31-93 percent of corn ears in northwest area. Adults numerous at lights in this area. Total of 335 moths taken in blacklight trap in Atchison County August 28.

* According to recent taxonomic studies by L.M. Russell. This aphid on sorghum appears to be this species.

(Munson). ALABAMA - Larvae increasing problem in older soybeans in southern area. Controls in progress in many fields in Mobile, Conecuh, Escambia, Covington, Geneva, and other southern counties. (Vickery et al.). MISSISSIPPI - Moderate on young soybeans just beginning to pod in Tunica County; mostly fourth instars averaged 1 per 3 feet. (Dinkins). ARKANSAS - Negative to light in most soybean fields. Heaviest, 4 per 30 row foot, in Lee County. (Boyer). Only 4 soybean fields found infested in survey of 4,900 acres in Desha County; highest count 5 per 30 row feet. (Denver). Only 2 fields infested above treatment level (30 larvae per 30 row feet) on 6,000+ acres of soybeans in Jefferson County. (Sites). Controls applied to 1,000 acres of soybeans on farm in Jefferson County. (Boyer). OKLAHOMA - Ranged 3-5 per head in grain sorghum in Okfuskee County and 2-7 per head on occasional heads in Ellis County. Ranged 0-3 per plant on soybeans in Osage County and averaged 4 per 10 sweeps in alfalfa in Lincoln County. (Okla. Coop. Sur.). NEW MEXICO - Damage heavy in corn in southern Dona Ana County. (N.M. Coop. Rpt.).

CORN LEAF APHID (*Rhopalosiphum maidis*) - WYOMING - Light in corn in Fremont, Hot Springs, Big Horn, and Park Counties. Averaged 960 per row foot in barley field in Fremont County. (Parshall). KANSAS - Ranged 25-150 per sorghum plant on 75-90 percent of plants in every field checked in Dickinson, Marion, McPherson, Saline, Rice, Ellsworth, and Harvey Counties. (Simpson). OKLAHOMA - Averaged 1,000 per whorl in sorghum in Tillman County; ranged 200-1,000 per whorl in Ellis County. (Okla. Coop. Sur.). ALABAMA - Maize dwarf mosaic increasing problem in large corn acreages in Walker, Cleburne, Tuscaloosa, Hale, Shelby, and other northern counties. Aphids in all fields. (Jones et al.).

PAINTED LADY (*Vanessa cardui*) - WASHINGTON - Larval infestations spotted on thistle east of Othello and on Royal Slope, Adams County. (Powell).

POTATO LEAFHOPPER (*Empoasca fabae*) - WISCONSIN - No increase noted; highest counts only 6 per sweep in sandy soiled alfalfa fields. (Wis. Ins. Sur.). MARYLAND - Rapidly decreasing on all crops statewide. (U. Md., Ent. Dept.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - NEBRASKA - Ranged up to 51 (average 14) per 100 leaves in 12 Dawson County seedling alfalfa fields and up to 21 (average less than 1) per 100 sweeps in 12 mature fields. (Manglitz, Aug. 21). Ranged 180-880 per square foot in 8 seedling alfalfa fields in same area. (Pruess). KANSAS - Trace, 5-10 per 10 sweeps, in 50 percent of alfalfa checked in northeast, east-central, and central districts. No aphids in other fields checked. (Simpson). OKLAHOMA - Ranged 40-600 per 10 sweeps in alfalfa in Logan, Creek, Lincoln, and Payne Counties. (Okla. Coop. Sur.).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NEW YORK - Extremely heavy second brood in some western areas. Egg laying still heavy on sweet corn in Monroe County. Moth catches in trap at Poughkeepsie heavy August 19-26. Egg masses common on sweet corn in green tassel and silking stages in Hudson Valley. First to fifth instars on 88 of 100 plants in untreated sweet corn planting at Accord August 20. Current threat to sweet corn heaviest in 17 years, according to observer. (N.Y. Wkly. Rpt.). DELAWARE - Moths remain heavy in blacklight trap in Sussex County. (Boys, Kelsey). MARYLAND - Exceptionally heavy in corn throughout State. Moths averaged 120 per night in blacklight trap collections at Centerville, Queen Annes County. Heavy infestations on corn expected to continue to increase. (U. Md., Ent. Dept.). ALABAMA - Larvae light to moderate in 100-acre cornfield on farm in Baldwin County about August 8 for a new county record. Infestation about 180 miles south of any previously known infestation in State. (Estes). OHIO - Second-generation larvae apparently more common on corn than usual in 1968. Ear infestations up to 50 percent in northwestern and western areas. (Rose). MICHIGAN - Normal emergence pattern changed by hot, humid weather. Moths increased greatly at blacklight stations. Collections

increased from 48 August 19 to 90, 101, 144, 156, and 159 on successive nights in Lenawee County. Potentially damaging larval populations expected until well into September. Catches increased from 36 August 19 to 164 August 23 in Montcalm County. Females more abundant than males. (Janes). INDIANA - Heavy flight indicated by collection of 2,500+ moths in light trap at Johnson, Gibson County. (Huber). ILLINOIS - First-generation survey showed average number of borers per 100 stalks by district as follows: Northwest 2, northeast 2, east 1.4, central 0.3, west 8.8, west-southwest 2.4, and southeast 6.5. State average 2.8 borers per 100 stalks compared with 8 in 1967. (Ill. Ins. Rpt.). WISCONSIN - Larvae heaviest in earlier corn plantings in most cases. First to fifth instars too heavy in some sweet corn fields despite controls; infested 8-28 percent of tips. (Wis. Ins. Sur.). NORTH DAKOTA - First-brood larvae nearly full grown on corn in southeast area; no pupation. Ranged 4-960 (average 250) per 100 plants. Plant infestations ranged 4-100 (average 42) percent. (Brandvik).

WESTERN BEAN CUTWORM (*Loxagrotis albicosta*) - NEBRASKA - New county records are Adams, Kearney, Gosper, Hayes, Logan, Custer, Valley, and Sherman Counties. Negative in 6 cornfields in Fillmore and Webster Counties. Infested from less than 1 to 65 (average 11) percent of plants in corn surveyed in preceding counties and in Hitchcock County. (Keith, Rai). COLORADO - Larvae noted on corn in Roggen area, Weld County, and Bijou Hill area, Morgan County. Light to moderate in only few fields. (Johnson, Pithian).

FALL ARMYWORM (*Spodoptera frugiperda*) - ALABAMA - Larvae very heavy and completely destroyed 40-acre field of late corn at Butler Springs, Butler County. (Lemons). MARYLAND - Damaged 12 percent of 40-acre corn stand near Love Point, Queen Annes County. (U. Md., Ent. Dept.). NEW YORK - Moderate on sweet corn in Hudson Valley. (N.Y. Wkly. Rpt., Aug. 26).

SORGHUM WEBWORM (*Celama sorghiella*) - OKLAHOMA - Counts per head in grain sorghum by county: Bryan 150; Okfuskee 3-48; Osage 48; Payne 1-2 in 10 percent of heads; Tillman 65. Heavy in scattered fields in Marshall, Bryan, Garvin, McCurtain, Coal, and Oklahoma Counties. (Okla. Coop. Sur.).

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - ARKANSAS - Pupation apparently ceased in early corn in eastern area. Pupae very numerous in late corn 2 weeks ago in northeast area. None found this week in corn nearing maturity in Lee County. Larvae boring below ground level; 60 percent have entered winter phase. (Boyer). ILLINOIS - Larvae per 100 cornstalks averaged 50 in late-planted field and 13 in earlier planted field in Alexander County; about 95 percent empty pupal cases in fields. (Ill. Ins. Rpt.).

SOUTHERN CORNSTALK BORER (*Diatraea crambidoides*) - MARYLAND - Damaged 5 percent of 75-acre corn stand near Grasonville, Queen Annes County. (U. Md., Ent. Dept.).

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - OKLAHOMA - Ranged up to 4 per plant in 10 percent of late sorghum plants in Payne County. (Okla. Coop. Sur.).

CORN ROOTWORMS (*Diabrotica* spp.) - KANSAS - Abundance survey on corn completed in 19 northeastern counties. *D. virgifera* most numerous in 17 counties; *D. longicornis* most abundant in 2 counties. *D. undecimpunctata howardi* less than 10 percent of population in 11 counties. Adult average range per plant by species: *D. virgifera* 0.56-3.37; *D. longicornis* 0-1.8; *D. undecimpunctata howardi* 0.04-1.00. (Simpson, Wilde). SOUTH DAKOTA - *D. undecimpunctata howardi* 10 per 15 cornstalks in isolated cornfield southwest of Cottonwood, Jackson County; *D. virgifera* less than 2 percent of adult population. *D. virgifera* in Jackson County is a new county record. (Jones). MINNESOTA - *D. longicornis* and *D. virgifera* adult average per acre on corn by county: Murray 23,856; Nobles 41,345; Pipestone 22,075; Rock 42,945; Scott 9,967; Le Sueur 11,955; Washington 12,285. *D. virgifera* predominant in Nobles County; *D. longicornis* most numerous in other 6 counties. (Minn. Ins. Rpt.). WISCONSIN - *D. virgifera* much more common in corn in many areas than in previous years; easily recovered in southern

counties. *D. virgifera* outnumbered *D. longicornis* 3 to 1 in one field in extreme western Lafayette County. *D. longicornis* numerous in many cornfields in Rock County. Heavy feeding present on some corn ear tips. Occasional new adults still in soil of check fields in Rock County; no immatures seen. (Wis. Ins. Sur.).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - MARYLAND - Adults taken on corn silks near Fallston, Harford County, August 28, 1968, by J.L. Hellman. Det. by J.L. Hellman. This is a new county record. This pest caused 10-15 percent lodging of corn near Unionville, Sabillasville, and Lewistown, Frederick County. (U. Md., Ent. Dept.). OHIO - Adult survey completed this week. Highest numbers in southwestern area with some lodging in few fields. (Rose). ILLINOIS - Adults per corn plant 0-2.6 (average 0.6) in west-southwest district and 0-1.25 (average 0.4) in southeast district. (Ill. Ins. Rpt.). KANSAS - Adults collected on corn in Sumner County in August for a new county record. (Wilde).

WESTERN CORN ROOTWORM (*Diabrotica virgifera*) - INDIANA - Single specimen collected in corn northeast of Brook in Newton County August 28, 1968, by G.E. Gould. This is a new State record. (Huber). KANSAS - Adults collected on corn in Grant County in August for a new county record. (Brooks).

SOUTHERN CORN ROOTWORM (*Diabrotica undecimpunctata howardi*) - NORTH DAKOTA - Adults ranged up to 32 (average 2.4) per 100 plants in 25 percent of cornfields in Dickey, Ransom, and La Moure Counties. (Kaatz).

CORN FLEA BEETLE (*Chaetocnema pulicaria*) - MARYLAND - Increasing on corn state-wide. Infestations up to 50 percent in field corn near Thurmont, Frederick County. (U. Md., Ent. Dept.).

BLACK BLISTER BEETLE (*Epicauta pennsylvanica*) - SOUTH DAKOTA - Adults averaged 5 per sorghum head in field north of Quinn, Pennington County. (Jones).

SORGHUM MIDGE (*Contarinia sorghicola*) - MISSISSIPPI - Heavy in 100 acres of sorghum in Noxubee County; treatment applied. (Dinkins, Aug. 23). OKLAHOMA - Heavy in isolated sorghum fields in Garvin County; damage averaged 95 percent in one field. (Okla. Coop. Sur.).

APHIDS - WYOMING - Ranged 0-200 per corn plant in Fremont, Hot Springs, and Big Horn Counties; heaviest, averaged 80 per plant, in Fremont County. (Parshall). OREGON - All stages of *Rhopalosiphum padi* heavy in sweet corn planting near Roseburg, Douglas County, August 16. Det. by T. Kono. (Larson).

SPIDER MITES (*Tetranychus* spp.) - NEBRASKA - Ranged 4-20 per square inch on corn leaves in several Boone County fields. Damage nearly economic in few fields. (Roselle, Aug. 23). COLORADO - *T. urticae* remains light to moderate on corn throughout State. (Johnson).

TURF, PASTURES, RANGELAND

WEBWORMS - DELAWARE - *Crambus* spp. damage severe on turf in scattered areas of New Castle and Kent Counties. (Boys, Kelsey). KANSAS - *Surattha indentella* adult emergence apparently peaked for season in State. (Sorensen).

FALL ARMYWORM (*Spodoptera frugiperda*) - ALABAMA - Larvae light to medium in several grass hayfields in Chambers County. (Taylor). Probably this species becoming problem in grass hayfields in Elmore and Bibb Counties. Light on grass in golf course in Lee County. (Morris et al.).

HAIRY CHINCH BUG (*Blissus hirtus*) - DELAWARE - Adults numerous on lawns in New Castle County. (Boys, Kelsey).

A MEALYBUG (*Heterococcus* sp.) - CALIFORNIA - Medium on Bermuda grass at El Centro, Imperial County. (Cal. Coop. Rpt.).

FORAGE LEGUMES

GREEN CLOVERWORM (*Plathypena scabra*) - MARYLAND - Ranged 1-3 per 5 sweeps on alfalfa in Frederick County. (U. Md., Ent. Dept.). WISCONSIN - Larvae 3-10 per sweep in all alfalfa checked in southern quarter of State; adults common in many fields. (Wis. Ins. Sur.). IOWA - Half to full-grown larvae averaged 3 per sweep in alfalfa in central and east-central areas. (Iowa Ins. Sur.). KANSAS - Light to moderate, 8-35 per 10 sweeps, in many alfalfa fields in Pottawatomie, Shawnee, Dickinson, Marion, Saline, and McPherson Counties. (Simpson). OKLAHOMA - Counts per 10 sweeps in alfalfa averaged 35 in Logan County and ranged 2-3 in Creek, Lincoln, and Payne Counties. (Okla. Coop. Sur.).

ALFALFA CATERPILLAR (*Colias eurytheme*) - WISCONSIN - Larvae up to 3-10 per sweep on alfalfa in State; adults prevalent in most alfalfa. (Wis. Ins. Sur.). COLORADO - Second-generation larvae 0-20 per 100 sweeps in alfalfa in Weld County. (Johnson). NEW MEXICO - Generally light on alfalfa in State. (N.M. Coop. Rpt.).

ZEBRA CATERPILLAR (*Ceramica picta*) - COLORADO - Early instars 0-40 per 100 sweeps in alfalfa in Boulder, Larimer, Weld, and Morgan Counties. (Johnson). NEVADA - Averaged 1 per sweep in alfalfa in Smith Valley, Lyon County. (Lauderdale).

WEBWORMS (*Loxostege* spp.) - OKLAHOMA - Counts per 10 sweeps in alfalfa averaged 32 in Logan County and 10 in Lincoln County. (Okla. Coop. Sur.). KANSAS - *L. commixtalis* light, 3-8 per 10 sweeps, in most alfalfa checked in northeast, east-central, and central districts. (Simpson).

PEA APHID (*Acyrtosiphon pisum*) - NEW MEXICO - Light to medium in alfalfa in Farmington area, San Juan County. (Heninger). COLORADO - Ranged 100-3,000 per 100 sweeps in alfalfa in Morgan, Weld, Larimer, and Boulder Counties. (Johnson). WYOMING - Adults and nymphs per 100 sweeps in alfalfa averaged 270 in Fremont County and 98 in Park, Big Horn, and Hot Springs Counties. (Parshall). NEBRASKA - Ranged up to 3 per 100 sweeps in 12 seedling alfalfa fields in Dawson County. Many predators in mature fields, very few in seedling fields. (Manglitz, Aug. 21). NORTH DAKOTA - Heavy, ranged 200-1,000 (average 612) per 100 sweeps in some Sargent County alfalfa. (Kaatz). WEST VIRGINIA - Moderate, 332-657 per 25 sweeps, on alfalfa in State. (Weaver).

MEADOW SPITTLEBUG (*Philaenus spumarius*) - MISSOURI - Collected in Gentry County by J.L. Huggans and L.R. Hanning for a new county record. (Munson). ILLINOIS - Average per sweep in alfalfa, clover, and wheat stubble by district: East-southeast 2.0, east 0.5, and northeast 1.5. (Ill. Ins. Rpt.).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - OKLAHOMA - Mostly adults per 10 sweeps in alfalfa averaged 15 in Creek County and ranged 4-6 in Payne, Logan, and Lincoln Counties. (Okla. Coop. Sur.).

ALFALFA WEEVIL (*Hypera postica*) - NEW MEXICO - Larvae 20-70 per 25 sweeps on alfalfa in Farmington area, San Juan County; some damage. (Heninger). WISCONSIN - Recovered in Iowa and Lafayette Counties for new county records. (Wis. Ins. Sur.). WYOMING - Larvae ranged 16-300 (average 102) and adults 7-36 (average 16) per 100 sweeps in third-crop alfalfa in Fremont County. Larvae 9 and adults 3 per 100 sweeps in third-crop alfalfa in Park, Big Horn, and Hot Springs Counties. (Parshall). MICHIGAN - Adult emergence continues in State. Larvae light, ranged from zero in uncut field to 5 in third-crop alfalfa field. Adults per 200 sweeps ranged 9-16 in uncut fields and 38-74 in third-crop fields. (Newman, Aug. 26). WEST VIRGINIA - Adults and larvae less than 10 per 100 sweeps at time of second cutting in State. (Weaver).

BLACK BLISTER BEETLE (*Epicauta pennsylvanica*) - COLORADO - Adults 10-30 per 100 sweeps in alfalfa in Morgan, Weld, Larimer, and Boulder Counties. (Johnson). NORTH DAKOTA - Adults up to 200 (average 31) per 100 sweeps on alfalfa in Ransom, La Moure, Dickey, and Sargent Counties. (Kaatz). IOWA - Averaged less than 2 per 100 sweeps in alfalfa in central and east-central areas. (Iowa Ins. Sur.). MISSOURI - Found in most alfalfa in northwest area. Adults averaged 38 per 10 sweeps in one field. (Munson).

CORN ROOTWORMS (*Diabrotica* spp.) - WISCONSIN - *D. longicornis* averaged 10 per sweep in alfalfa in Rock County. (Wis. Ins. Sur.). NORTH DAKOTA - *D. undecimpunctata howardi* ranged up to 20 (average 7) per 100 sweeps on alfalfa in Dickey, Sargent, Ransom, and La Moure Counties. (Kaatz).

PLANT BUGS - WYOMING - *Lygus* spp. adults and nymphs averaged 24 per 100 sweeps in third-growth alfalfa in Fremont, Hot Springs, Big Horn, and Park Counties. (Parshall). KANSAS - *Lygus* spp. light. 2-10 per 10 sweeps, in most alfalfa checked in eastern area. (Simpson). IOWA - *Adelphocoris lineolatus* very light, averaged less than 1 per 10 sweeps in alfalfa in State. (Iowa Ins. Sur.).

GRASSHOPPERS - ILLINOIS - Average per square yard in alfalfa, clover, and wheat stubble by district: East-southeast 2.3 in fields, 1.7 on margins; east 2.1 in fields, 1.3 on margins; and northeast 2.0 in fields, 0.8 on margins. (Ill. Ins. Rpt.).

SOYBEANS

GREEN CLOVERWORM (*Plathypena scabra*) - MARYLAND - Damaged 5 percent of 10-acre stand on Kent Island, Queen Annes County. (U. Md., Ent. Dept.). MICHIGAN - Moth collections numerous in southern growing areas past week. Total of 124 moths taken at Lenawee County blacklight station August 19-24; 51 taken at Montcalm County station same period. Flights result of light to moderate larval population past few weeks. (Jones, Newman). WISCONSIN - Larvae feeding. Highest incidence in many years. (Wis. Ins. Sur.). IOWA - Larvae ranged 1-4 per row foot in central and east-central areas; much larval parasitism. (Iowa Ins. Sur.). KANSAS - Ranged 10-45 per 100 sweeps in Shawnee, Pottawatomie, Jackson, Jefferson, and Douglas Counties. Much defoliation noted in heaviest infested fields. (Simpson). ARKANSAS - Increasing, many small larvae noted. Numbers below economic level. (Boyer). OKLAHOMA - Ranged 2-8 per plant in Osage County; foliage damaged. (Okla. Coop. Sur.).

CABBAGE LOOPER (*Trichoplusia ni*) - ARKANSAS - Increasing, but noneconomic in State. (Boyer). ALABAMA - This species and *Pseudoplusia includens* larvae heavy in some Covington County fields. (McQueen).

ALFALFA CATERPILLAR (*Colias eurytheme*) - MARYLAND - Damaged 5 percent of 10-acre stand on Kent Island, Queen Annes County. (U. Md., Ent. Dept.).

SPOTTED CUCUMBER BEETLE (*Diabrotica undecimpunctata howardi*) - MARYLAND - Adult feeding damaged 5 percent of 55 acres on Kent Island, Queen Annes County. (U. Md., Ent. Dept.).

PEANUTS

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - ALABAMA - Severe damage continues in peanut belt of southeast area; various instars heavy on stems of vines and nuts on 2 Houston County farms. Larvae eating through hulls in many cases and destroying kernels. Damage continues in Geneva County. (Roney et al.).

GRANULATE CUTWORM (*Feltia subterranea*) - ALABAMA - This and other species continue damaging in Geneva County. (Reynolds).

COTTON

BOLL WEEVIL (*Anthonomus grandis*) - SOUTH CAROLINA - Decreasing in treated fields at Florence. Larvae infested 0.8-32.6 percent of treated plots and 31 percent of untreated plot. Adults per 100 squares ranged 0-2.2 in treated plots and averaged 1 in untreated plot. (Taft et al., Aug. 23). TENNESSEE - Continues to damage small bolls in late cotton in western area. Migration continues to non-infested area to north. Strong winds from northeast may slow down migration to some extent. (Locke). ALABAMA - Continued to increase statewide. Widespread and generally heavy throughout northern area. Controls general throughout this area, including mountain areas of Jackson, De Kalb, Marshall, and other higher elevation counties. (McQueen). MISSISSIPPI - Remained light in Grenada, Leflore, Tallahatchie, Coahoma, and Quitman Counties August 17-23; infestations averaged 5-10 percent in 30 fields checked. Infestations ranged 5-15 percent in 20 fields checked in Yazoo County. Punctured squares higher due primarily to fewer squares August 24-30. Many fields in north delta terminated growth while some fields in south delta beginning to terminate. Infestations ranged 4-35 (average 10-15) percent in most fields in Yazoo, Tallahatchie, Leflore, and Coahoma Counties. (Dinkins). Punctured squares found in 14 of 17 fields checked in delta counties; average infestation 14.6 (maximum 75) percent. General movement from heavily infested fields. (Pfirmer et al.). LOUISIANA - Infestations in experimental plots decreased in Madison Parish August 16-22. Punctured squares ranged 1-32 (average 10.6) percent in 117 plots and 6-70 (average 23) percent in 20 fields surveyed. Collected 14 weevils from caged traps, 2 from 5 winged traps (5 females in each), and 1 from 10 winged traps (5 males in each) in male sex attractant test; total to date 2,594. Punctured squares ranged 4-80 (average 24.4) percent in 141 experimental plots and 3-88 (average 22.6) percent in 20 fields surveyed in Madison Parish August 23-29. Squares scarce in most fields. Collected 11 weevils from caged traps, 3 from 5 winged traps (5 females in each), and 3 from 10 winged traps (5 males in each) during male sex attractant test; total to date 2,611. No overwintered weevils in collections. (Cleveland et al.). ARKANSAS - Infested 4,740 (79.9 percent) of fields surveyed; above treatment level in 1,604 (27 percent) of fields. Treated 1,397 fields. (Boyer, Barnes). OKLAHOMA - Percent punctured squares by county: Jackson 5; Tillman 8-16; Johnston 35-60; Marshall 2-5; Logan 35; Coal 2; and Washita, Caddo, Custer, and Beckham up to 20. (Okla. Coop. Sur.). For Boll Weevil in High Plains of Texas see page 869.

BOLLWORMS (*Heliothis* spp.) - SOUTH CAROLINA - Larvae infested 0.3-9.2 percent of treated plots and 0.2 percent of untreated plot at Florence. *H. zea* and *H. virescens* moths very high in light trap collections. Total of 3,211 *H. zea* and 243 *H. virescens* moths taken during period; total to date 8,012 *H. zea* and 316 *H. virescens*. (Taft et al., Aug. 23). TENNESSEE - Much damage over western area. Rank late cotton still attractive to moths. Egg laying continues heavy in those fields not "cut-out." (Locke). ALABAMA - Larvae increased in much of northern area where moth flights increasing; much cotton continues succulent. (McQueen). MISSISSIPPI - *H. zea* and *H. virescens* remained low throughout most areas of delta August 17-23. Egg counts ranged from 50 per 100 younger plants to 5 per 100 older plants in Leflore, Tallahatchie, and Quitman Counties. First through third instars averaged about 3 per 100 plants. *H. zea* and *H. virescens* square damage generally light to moderate (averaged 4-5 percent) in Yazoo, Tallahatchie, Leflore, and Coahoma Counties August 24-30. Many first instars noted in terminals in some Yazoo County fields. Egg laying generally light to moderate; heaviest in lush vegetation. Eggs up to 40 per 100 terminals in one field; averaged about 8-10 per 100 terminals in all fields. (Dinkins). Percent *H. zea* damaged squares averaged 2.3 (maximum 8.0) in 12 of 17 fields in delta counties. Egg laying continues although moth activity slowed by cool evening temperatures. (Pfirmer et al.). LOUISIANA - *H. zea* damaged squares ranged 1-10 (average 2.5) percent in 114 plots and damaged bolls 1-7 (average 2.2) percent in 101 plots of 117 experimental plots examined in Madison Parish August 16-22. Damaged squares ranged 1-13 (average 3.6) percent and damaged bolls 1-7 (average 1.8) percent in 19 of 20 fields surveyed. Collections indicated increased moth activity; total of 158 *H. zea* and 18 *H. virescens* taken in blacklight trap

past week. H. zea damaged squares ranged 1-17 (average 8.0) percent in 140 plots and damaged bolls 1-5 (average 1.9) percent in 123 plots of 141 experimental plots examined in Madison Parish August 23-29. Damaged squares ranged 1-18 (average 5.2) percent and damaged bolls 1-4 (average 1.6) percent in 19 of 20 fields surveyed. Collections indicate further increase in moth activity; total of 462 H. zea and 23 H. virescens taken in blacklight trap during period. (Cleveland et al.). ARKANSAS - Primarily H. zea eggs and/or larvae in 4,028 (67.9 percent) of fields surveyed; square damage in 4,277 (72.1 percent) of fields. Above treatment level in 693 (11.7 percent) of fields. Of specimens collected, 47 determined H. zea during period. H. virescens 4.5 percent of specimens collected during season. Treated 1,129 fields for bollworm and additional 1,336 fields for bollworm and boll weevil. (Boyer, Barnes). OKLAHOMA - Egg infestations averaged 18 percent and fruit damage 32 percent in Newcastle area, McClain County. Damage ranged 10-20 percent in Greer, Marshall, and Johnston Counties. Numbers ranged 4-8 per 100 terminals in Jackson and Tillman Counties. Moderate in Bryan County; light in Custer, Caddo, Washita, and Beckham Counties. (Okla. Coop. Sur.). TEXAS - Light and noneconomic in Martin, Gaines, Crosby, Lynn, Lamb, Yoakum, Dawson, and Mitchell Counties. (Almand, Aug. 27). NEW MEXICO - H. zea generally light in cotton; only isolated fields with enough damage to warrant treatment. (N.M. Coop. Rpt.).

CABBAGE LOOPER (Trichoplusia ni) - SOUTH CAROLINA - Moths high in light trap collections at Florence. Total of 1,694 moths taken during period; total to date 4,477. (Taft et al., Aug. 23). ALABAMA - Continued heavy in central and some northern areas. Reported in 25-acre field in Blount County, one field in Franklin County, and previously in Cherokee and Jackson Counties. (McCall et al.). TENNESSEE - Disease reducing infestation over western cotton-growing area. (Locke). MISSISSIPPI - General infestation in Grenada, Leflore, Tallahatchie, Coahoma, Quitman, and Yazoo Counties August 17-23. Damage moderate to foliage in some fields. Virus infection checking populations in some fields. All instars currently found in fields checked. Foliar damage heavy in some fields in Yazoo, Tallahatchie, Leflore, and Coahoma Counties August 24-30. (Dinkins). Abundant in most fields in delta counties. Much "ragging" of foliage; no control warranted in most cases. (Pfrimmer et al.). LOUISIANA - Collected 961 moths in blacklight trap in Madison Parish August 16-22 and 1,990 August 23-30. (Cleveland et al.). ARKANSAS - Increasing, but noneconomic in State. Feeding mainly on older leaves. (Boyer, Barnes). Eggs averaged about 10 per 100 terminals in Desha County. (Denver).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - CALIFORNIA - Very severe on plantings in Imperial County. Last major outbreak occurred in 1955. Resistance to some insecticides and extensive use of chemical control for pink bollworm responsible for current outbreak. Less serious in Riverside County and does not occur in San Joaquin Valley. (Cal. Coop. Rpt.).

SPIDER MITES - TENNESSEE - Damage severe over western area. Completely defoliated untreated fields. (Locke). MISSISSIPPI - Tetranychus urticae light in Leflore, Tallahatchie, and Quitman Counties August 17-23. Numbers declining; infestations scattered throughout fields. Averaged less than 1 per square inch of leaf surface in 8 infested fields in Tallahatchie, Leflore, and Coahoma Counties August 24-30. (Dinkins). T. urticae light in 6 and medium in 5 of 17 fields in delta counties. (Pfrimmer et al.). ALABAMA - Mostly T. urticae continues widespread, but spotty in northern area. (McQueen).

TOBACCO

GREEN PEACH APHID (Myzus persicae) - WISCONSIN - Heavy in some spots in Dane County planting. Heavy predation by syrphid fly and lacewing larvae and lady beetles. (Wis. Ins. Sur.).

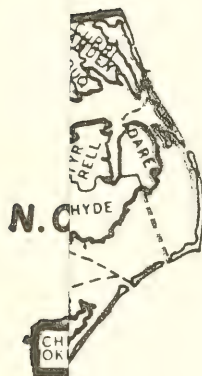
VARIEGATED CUTWORM (Peridroma saucia) - WISCONSIN - Early instars prevalent in Dane County planting. (Wis. Ins. Sur.).

15. Leaf tobacco, except flue-cured leaf tobacco.
16. Ear corn, except shucked ear corn.

Ear corn in the shuck is exempt** if harvested without coming in contact with the soil.

17. Used crates, boxes, burlap bags, cotton picking sacks, and other used farm-products containers.
18. Used farm tools and implements.

19. Used farm tools and implements are exempt** if cleaned free of soil.
19. Used mechanical and electrical equipment.



ONS ARE IMPOSED ON THE
OF REGULATED ARTICLES
INTO OR THROUGH WHITE.

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TOR OR YOUR COUNTY
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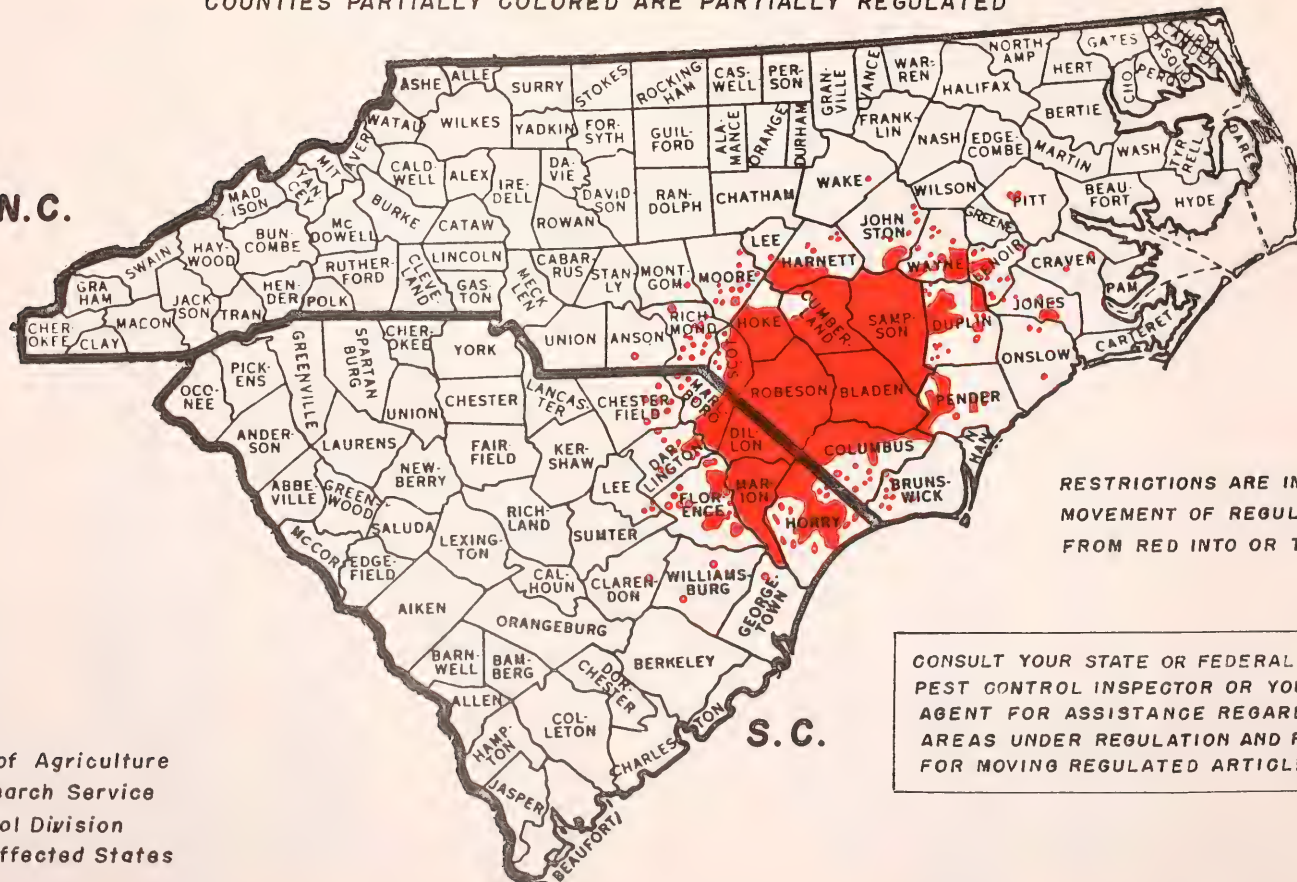
U. S. Department of Agriculture
Agricultural Research
Plant Pest Control Division
Cooperating with affected

Revised Mar. 20, 1968 REGULATED ARTICLES.

WITCHWEED QUARANTINE

COUNTIES ENTIRELY COLORED ARE COMPLETELY REGULATED;
COUNTIES PARTIALLY COLORED ARE PARTIALLY REGULATED

N.C.



RESTRICTIONS ARE IMPOSED ON THE
MOVEMENT OF REGULATED ARTICLES
FROM RED INTO OR THROUGH WHITE.

CONSULT YOUR STATE OR FEDERAL PLANT
PEST CONTROL INSPECTOR OR YOUR COUNTY
AGENT FOR ASSISTANCE REGARDING EXACT
AREAS UNDER REGULATION AND REQUIREMENTS
FOR MOVING REGULATED ARTICLES.

S.C.

U.S. Department of Agriculture
Agricultural Research Service
Plant Pest Control Division
Cooperating with affected States

THE FOLLOWING CROPS OR ARTICLES MUST BE MOVED UNDER CERTIFICATE OR
PERMIT YEAR-ROUND EXCEPT AS INDICATED:

1. Soil, compost, decomposed manure, humus, muck, and peat, separately or with other things; sand; and gravel.
Soil samples of any size shipped to U.S. Army Corps of Engineers soil laboratories within the conterminous United States are exempt.
 2. Plants with roots.
 3. Grass sod.
 4. Plant crowns and roots for propagation.
 5. True bulbs, corms, rhizomes, and tubers of ornamental plants.
 6. Root crops, except those from which all soil has been removed.
Root crops are exempt if moving to a designated processing plant.*
 7. Peanuts in shells and peanut shells, except boiled or roasted peanuts.
 8. Small grains and soybeans.
Small grains are exempt* if such grains and any containers for the grains did not come in contact with the soil during harvesting, or if they have been cleaned at a designated facility.*
- Soybeans are exempt* if such beans and any containers for the beans did not come in contact with the soil during harvesting and if such beans are moving forthwith to a designated oil mill or facility* for crushing or cleaning, or if they have been cleaned with an air-blast cleaner having a capacity of 2,500 cubic feet per minute.
9. Hay, straw, fodder, and plant litter of any kind.
 10. Seed cotton, cotton lint, cotton liners, and gin trash.
Seed cotton is exempt if moving to a designated gin.*
 11. Stumpwood.
 12. Long green cucumbers, cantaloupes, peppers, squash, tomatoes, and watermelons, except those from which all soil has been removed.
 13. Pickling cucumbers, string beans, and field peas.
Pickling cucumbers, string beans, and field peas are exempt* if washed free of soil with running water.
 14. Cabbage, except firm heads with loose outer leaves removed

SUGARBEETS

SUGAR-BEET ROOT MAGGOT (Tetanops myopaeiformis) - COLORADO - Larvae 0-10 per sugar-beet in field in Black Hollow area, Weld County. (Johnson).

VARIEGATED CUTWORM (Peridroma saucia) - NEBRASKA - Spotty and heavy; averaged 4-5 per plant in Scotts Bluff County. (Hagen).

MISCELLANEOUS FIELD CROPS

EUROPEAN CORN BORER (Ostrinia nubilalis) - MARYLAND - Infested 20 percent of 3-acre sunflower stand in McGinnes, Queen Annes County. (U. Md., Ent. Dept.).

GRASSHOPPERS (Melanoplus spp.) - MARYLAND - Damage light to 10 percent of 3-acre sunflower stand at McGinnes, Queen Annes County. (U. Md., Ent. Dept.).

POTATOES, TOMATOES, PEPPERS

EUROPEAN CORN BORER (Ostrinia nubilalis) - MARYLAND - Larval infestations on unsprayed peppers expected to be heavy on Eastern Shore this year due to heavy carryover from corn. (U. Md., Ent. Dept.).

POTATO TUBERWORM (Phthorimaea operculella) - OHIO - Damaging potato and tomato leaves and stems and potato tubers in State. Larval damage to potato tubers noted in Lorain County. Adult emergence in progress. (Miller, Limbird).

CABBAGE LOOPER (Trichoplusia ni) - RHODE ISLAND - Moderate on treated potatoes in Washington County. (Kerr, Field).

POTATO APHID (Macrosiphum euphorbiae) - NEVADA - Heavy; browned and wilted 50 acres of potatoes in Smith Valley, Lyon County; treatments applied. (Batchelder).
RHODE ISLAND - Few immatures in isolated areas in Washington County. (Kerr, Field).

GREEN PEACH APHID (Myzus persicae) - WASHINGTON - Spots of current season leaf roll apparent where rapid aphid buildup begun on potatoes 3 weeks ago at Quincy, Grant County. (Landis).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - RHODE ISLAND - Moderate on potatoes in Washington County. (Kerr, Field).

PEPPER MAGGOT (Zonosemata electa) - NEW JERSEY - Adults per stickyboard averaged 5.3 at Cedarville and 0.6 at Vineland August 22-28. (Ins.-Dis. Newsltr.).

BEANS AND PEAS

GREEN CLOVERWORM (Plathypena scabra) - DELAWARE - Larvae increasing in commercial lima bean plantings in Kent County. (Boys, Kelsey). WISCONSIN - Larvae feeding in lima bean fields. Highest incidence in many years. (Wis. Ins. Sur.).

COLE CROPS

CABBAGE LOOPER (Trichoplusia ni) - RHODE ISLAND - Heavy on rutabagas in Washington County. (Kerr, Field). NEW YORK - Active in Upstate area; egg laying heavy and hatch of young larvae substantial. Activity heavier and earlier in 1968 than in any year since serious infestation of 1959. Very apparent in Monroe County. Egg laying fairly heavy and well developed larvae found in some fields. (N.Y. Wkly. Rpt., Aug. 26). NEW JERSEY - Moths continue numerous in blacklight traps in State. (Ins.-Dis. Newsltr.). MICHIGAN - More abundant at Montcalm County black-

THE FOLLOWING CROPS OR ARTICLES MUST BE MOVED UNDER CERTIFICATE OR
PERMIT YEAR-ROUND EXCEPT AS INDICATED:

1. Soil, compost, decomposed manure, humus, muck, and peat, separately or with other things; sand; and gravel.
Soil samples of any size shipped to U.S. Army Corps of Engineers soil laboratories within the conterminous United States are exempt.
2. Plants with roots.
3. Grass sod.
4. Plant crowns and roots for propagation.
5. True bulbs, corms, rhizomes, and tubers of ornamental plants.
6. Root crops, except those from which all soil has been removed.
Root crops are exempt if moving to a designated processing plant.*
Peanuts in shells and peanut shells, except boiled or roasted peanuts.
7. Small grains and soybeans.
8. Small grains are exempt** if such grains and any containers for the grains did not come in contact with the soil during harvesting, or if they have been cleaned at a designated facility.*
Soybeans are exempt** if such beans and any containers for the beans did not come in contact with the soil during harvesting and if such beans are moving forthwith to a designated oil mill or facility* for crushing or cleaning, or if they have been cleaned with an air-blast cleaner having a capacity of 2,500 cubic feet per minute.
9. Hay, straw, fodder, and plant litter of any kind.
10. Seed cotton, cotton lint, cotton linters, and gin trash.
Seed cotton is exempt if moving to a designated gin.*
11. Stumpwood.
12. Long green cucumbers, cantaloupes, peppers, squash, tomatoes, and watermelons, except those from which all soil has been removed.
13. Pickling cucumbers, string beans, and field peas.
Pickling cucumbers, string beans, and field peas are exempt** if washed free of soil with running water.
14. Cabbage, except firm heads with loose outer leaves removed.
15. Leaf tobacco, except flue-cured leaf tobacco.
16. Ear corn, except shucked ear corn.
Ear corn in the shuck is exempt** if harvested without coming in contact with the soil.
17. Used crates, boxes, burlap bags, cotton picking sacks, and other used farm-products containers.
18. Used farm tools and implements.
Used farm tools and implements are exempt** if cleaned free of soil.
19. Used mechanized cultivating equipment and used harvesting machinery.
Used mechanized cultivating equipment and used harvesting machinery are exempt** if cleaned and repainted.
20. Used mechanized soil-moving equipment.
Used mechanized soil-moving equipment is exempt** if cleaned and repainted.
21. Any other products, articles, or means of conveyance, of any character whatsoever, not covered by the above when it is determined by an inspector that they present a hazard of spread of witchweed and the person in possession thereof has been so notified.

*Information as to designated facilities, gins, oil mills, and processing plants may be obtained from an inspector.

**Exempt if not exposed to infestation after cleaning or other prescribed handling.

light station than at any other station. Moths ranged 4-14 per night; weekly total 61. Total of 16 moths taken at Lenawee County station during same week. (Janes, Aug. 26).

IMPORTED CABBAGEWORM (*Pieris rapae*) - MISSISSIPPI - Damage heavy to collards in gardens in Grenada, LeFlore, Tallahatchie, and Webster Counties; partially destroyed some stands. (Dinkins, Aug. 23). RHODE ISLAND - Larvae moderate on cauliflower in Washington County. (Kerr, Field).

FLEA BEETLES - MISSISSIPPI - Damage severe to young mustard and turnip plants 2-3 inches tall in Oktibbeha County. Some replanting required. (Dinkins).

GENERAL VEGETABLES

NOCTUID MOTHS - MICHIGAN - *Crymodes devastator* weekly totals high at all county blacklight stations as follows: Lenawee 332, Montcalm 404, Berrien 208, and Newaygo 112. Consistently high past 4 weeks. *Feltia* spp. peaking in relatively high numbers; weekly total for Lenawee 873, Montcalm 932, Newaygo 647, and Berrien 582. (Newman, Aug. 26).

AN APHID (*Capitophorus braggii*) - CALIFORNIA - Damage severe to 5 acres of artichokes at Watsonville, Monterey County. Honeydew heavy and plants on ground. This species rarely seen in recent years. (Cal. Coop. Rpt.).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (*Carpocapsa pomonella*) - NEW MEXICO - Damage heavy on untreated or poorly treated apples and pears in San Juan County. (Heninger). INDIANA - Major adult flight, third of season, at Vincennes. Total of 90 second-generation males collected in virgin female traps in orchard compared with 54 previous week. (Dolphin, Aug. 26). NEW JERSEY - Trapped 3 in bait jar August 22-28 in Gloucester County. (Ins.-Dis. Newsltr.).

ORIENTAL FRUIT MOTH (*Grapholitha molesta*) - INDIANA - Fourth flight (third-generation adults) of season increasing at Vincennes; 164 adults taken in bait jars compared with 89 previous week. (Dolphin, Aug. 26). NEW JERSEY - Trapped 2 in bait jar August 22-28 in Gloucester County. (Ins.-Dis. Newsltr.).

LESSER PEACH TREE BORER (*Synanthedon pictipes*) - INDIANA - Adults common in postharvest peach orchards at Vincennes; male captures increased slightly from 307 to 310. (Dolphin, Aug. 26).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - INDIANA - Adults common although between broods at Vincennes; 243 males caught in virgin female traps compared with 356 previous period. (Dolphin, Aug. 26).

WALNUT CATERPILLAR (*Datana integerrima*) - OHIO - Widespread damage continued primarily on walnut and on some hickory foliage in State. Defoliation reported in Medina, Franklin, Richland, Wayne, and Delaware Counties. Larvae evident in Medina, Wayne, and Franklin Counties; some larvae have left trees to pupate. (Miller et al.).

APPLE MAGGOT (*Rhagoletis pomonella*) - DELAWARE - First larvae of season in apple orchard near Newark. (Boys, Aug. 29). NEW JERSEY - Adult average per stickyboard by county: Mercer 36, Gloucester 5, and Burlington 2. (Ins.-Dis. Newsltr.). INDIANA - Adult emergence of partial second brood begun at Vincennes. Total of 41 adults taken on stickyboards past week; none taken previous week. Second flight still threat to ripening apples. (Dolphin, Aug. 26). WISCONSIN - Still declining. Highest count at Bayfield (68) August 21-26. (Wis. Ins. Sur.).

PEAR PSYLLA (Psylla pyricola) - OREGON - Adults of last summer generation heavy and laying eggs in unsprayed pear orchards in Hood River area, Hood River County. Populations normal in sprayed orchards. (Zwick).

EUROPEAN RED MITE (Panonychus ulmi) - INDIANA - Continued to increase on foliage in apple orchard not sprayed since June 22 at Vincennes. Averaged 10.5 adults, 14.7 immatures, and 42.6 eggs per leaf. (Dolphin, Aug. 26). DELAWARE - Activity greatly reduced on apples in State. (Boys, Aug. 29). NEW YORK - Still problem in many apple blocks in Monroe and Orleans Counties. (N.Y. Wkly. Rpt., Aug. 26). RHODE ISLAND - Light on apple trees in Washington County. (Field).

SPIDER MITES - NEW MEXICO - Light to heavy on apples in San Juan County orchards; foliage browning. (Heninger). OKLAHOMA - Tetranychus spp. heavy on apple trees in Payne County; foliage dying. (Okla. Coop. Sur.). INDIANA - Tetranychus spp. continued light on apple trees at Vincennes; generally not problem in 1968. (Dolphin, Aug. 26).

WEATHER OF THE WEEK ENDING SEPTEMBER 2

HIGHLIGHTS: The first nippy weather of the fall covered the East last week. All-time high August temperatures occurred along California's coast. Precipitation ranged widely. Heavy showers fell in the Oklahoma and Texas Panhandles and a tropical depression flooded northeastern Florida.

PRECIPITATION: Steady light rain in the Pacific Northwest was interrupted briefly about midweek, but more light rain fell there over the weekend. Heavy showers fell Tuesday in southeastern Nebraska, western Iowa, and northern Kansas with some 6-hour totals ranging from over an inch to about 4 inches. Rains continued in Nebraska and Kansas on Wednesday and Thursday spreading southward to northern Texas and northward to the Dakotas. Spots in the Texas and Oklahoma Panhandles received 6 to 8-inch totals in heavy showers Thursday. Streams overflowed and water flooded highways, homes, and business establishments. A tropical depression over northern Florida dumped over 15 inches of rain at Jacksonville, Florida, in 96 hours. Considerable flooding occurred in northeastern Florida. Brunswick, Georgia, received over 8 inches in 5 days. In sharp contrast, a large area from Louisiana to eastern Kentucky received no rain or only light sprinkles. Another dry area included southern New England, New Jersey, Pennsylvania, and southward to central North Carolina. In the West, the dry area extended from southern Idaho to southern and central California.

TEMPERATURE: Temperatures averaged below normal from the Great Basin to the Atlantic coast. Much of the area from the Texas Panhandle to New York and from Wisconsin to northern Alabama averaged 7-10° below normal. Some parts of this large area experienced the coolest weather since late May. In contrast, California and the western parts of nearby States averaged warmer than normal. Several coastal stations in California registered alltime high August temperature readings. Clear skies and pleasantly cool weather prevailed over most of the parts of the United States at the beginning of the week. Only the Deep South experienced very warm temperatures, such as 97° at Augusta and Macon, Georgia, and Mobile, Alabama, on Monday. Early morning temperatures averaged mostly below normal. Thursday morning much of the area north of the Ohio River registered minimums in the 40's and the temperature at Nashville, Tennessee, dropped to 52°. The highest temperature at Atlanta, Georgia, on Saturday was 65° compared to 98° on the previous Saturday. Temperatures were more changeable in mid-America. To illustrate, Grand Island, Nebraska, registered the following daily maximums: Monday 94°, Thursday 62°, and Sunday 82°. Subfreezing temperatures occurred in the Colorado Rockies and light frost was noted in the mountains of West Virginia. (Summary supplied by Environmental Data Service, ESSA.)

CITRUS

AN ARMORED SCALE (Unaspis citri) - FLORIDA - Found infesting citrus August 20 at La Belle, Hendry County. This is a new Florida Department of Plant Industry county record. (Fla. Coop. Sur.).

SMALL FRUITS

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - NEVADA - Third-generation eggs and larvae heavy on grapes, adults numerous, at Las Vegas, Clark County. (Zoller).

ORNAMENTALS

A MEALYBUG (Eurycoccus blanchardii) - MARYLAND - Collected on root of hickory in soil at Silver Spring, Montgomery County, June 23, 1968, by L.M. Russell. Det. by H.L. McKenzie. This is a new State record. (Sailer).

LONG-TAILED MEALYBUG (Pseudococcus longispinus) - CALIFORNIA - Medium on orchid stock in nursery at South San Francisco, San Mateo County. (Cal. Coop. Rpt.).

AZALEA BARK SCALE (Eriococcus azaleae) - MARYLAND - Found on cultivated azalea at Silver Spring, Montgomery County, July 7, 1968. Collected and det. by L.M. Russell. This is a new county record. (Sailer).

A SLUG (Arion ater) - WASHINGTON - Specimens taken from commercial nurseries at Spokane, Spokane County. (Nonini). This is a new county record. (PPC). Infested 2 additional residences at Pullman, Whitman County. (Telford).

FOREST AND SHADE TREES

OLETHREUTID MOTHS (Rhyacionia spp.) - MICHIGAN - R. buoliana infested blocks of mugho and Scotch pine at 4 nurseries in Macomb and St. Clair Counties week ending August 23. Infestations more numerous and severe than usual this season. (Hanna, Aug. 26). OHIO - Last instars of R. frustrana noted; some pupation begun in Scotch pine in Scioto County. (Campbell).

FALL WEBWORM (Hyphantria cunea) - NEW MEXICO - Damage heavy on some trees at Farmington; webs up to 10 per tree. (Heninger). KANSAS - Moderate to heavy in most of eastern area. (Simpson). NEBRASKA - Heavy on cottonwood in Dundy, Chase, Hayes, Frontier, Logan, Custer, and Brown Counties. (Keith, Rai). TENNESSEE - Webs and defoliation present throughout State. Some damage to shade trees in mid-State area. Heavy on oaks, persimmon, redbud, and cherry. (Locke). OHIO - Defoliation continued on many deciduous trees; webbing common through much of central to eastern areas. (Rose).

MIMOSA WEBWORM (Homadula anisocentra) - OKLAHOMA - Leaf damage averaged 35 percent on 4 mimosa trees at Bristow, Creek County. Found on mimosa in several locations at Holdenville, Hughes County. These are new county records. (Okla. Coop. Sur.). IOWA - Larval damage heavy on honeylocust trees at Indianola, Warren County. Also found in Cedar County. Both are new county records. (Iowa Ins. Sur.). NEW JERSEY - Infestations common in Middlesex County. (Ins.-Dis. Newsltr.).

A BARK BEETLE (Leperisinus hoferi) - ARIZONA - Killed Modesto ash trees in residential area of Glendale, Maricopa County, week ending July 26. (Evans). This is a new county record. (Roney).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - NEBRASKA - Second-brood adults active at Schuyler, Colfax County. (Jacobs).

RED ELM BARK WEEVIL (Magdalis armicollis) - MICHIGAN - Larvae and many egg laying adults infested weakened elms in nursery at Flint, Genesee County, in Dutch elm disease control area. (Stout, Aug. 22). Elms serving as breeding sites will be promptly destroyed. (Hanna, Aug. 26).

LEAF BEETLES - WASHINGTON - Alders severely defoliated by Altica ambiens noted in Pend Oreille County August 17. (Gaines, Harwood). NEW MEXICO - Pyrrhalta luteola numbers and skeletonizing heavy on Siberian and American elms in San Juan Valley. (Heninger). MISSISSIPPI - Chrysomela scripta complex heavily damaged foliage of nursery-grown cottonwood saplings in Montgomery County; controls required. (Dinkins).

CALICO SCALE (Lecanium cerasorum) - DISTRICT OF COLUMBIA - Collected on Carpinus betulus (European hornbeam) by H.V. Wester April 15, 1968. Det. by L.M. Russell. Confirmed by R.F. Wilkey. This is a new District of Columbia record. (Sailer).

MAN AND ANIMALS

MOSQUITOES - CALIFORNIA - Unusually abundant and very annoying. Recent rains probably responsible for sudden upsurge. Nuisance may continue as rice fields being drained. (Cal. Coop. Rpt.). ALABAMA - Aedes sollicitans heavier than ever observed at Fowl River area of Mobile County. (Seibels). MICHIGAN - Mosquitoes still annoying throughout State. Rains and cool weather will aid in abating nuisance and populations should begin to decline. (Newman, Aug. 26). WISCONSIN - Still numerous, but biting reduced by cool evenings. No major biting problems expected unless wet and unseasonably warm weather occurs in September. (Wis. Ins. Sur.). MINNESOTA - More numerous in light traps August 17-23 than in previous week. Of 17,551 females in 16 traps, 15,548 were A. vexans. Decreased significantly in trap collections August 23-30. Youngest A. vexans at least 2 weeks old, indicating annoyance should be declining next week. Cool evening temperatures restricted activity. A. vexans predominant in evening and daytime bite collections. (Minn. Ins. Rpt.).

SCREW-WORM (Cochliomyia hominivorax) - Total of 208 cases reported in U.S. August 25-31 as follows: TEXAS - Atascosa 3, Andrews 1, Bexar 2, Bee 4, Brewster 20, Brooks 1, Crockett 12, De Witt 3, Edwards 2, Goliad 4, Hidalgo 4, Hudspeth 1, Jeff Davis 9, Jim Hogg 5, Karnes 2, Kenedy 11, Kimble 5, Kleberg 2, Lampasas 1, Mason 1, Menard 1, Midland 1, Reeves 5, Refugio 1, Pecos 30, Presidio 7, San Patricio 2, Starr 7, Sterling 2, Terrell 19, Val Verde 14, Willacy 1, Wilson 1; ARIZONA - Greenlee 4, Maricopa 1, Mohave 1, Pima 4, Yavapai 3; NEW MEXICO - Grant 7, Hidalgo 1; CALIFORNIA - San Diego 2, Riverside 1. Total of 396 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Baja California 11, Sonora 89, Chihuahua 42, Coahuila 177, Nuevo Leon 47, Tamaulipas 30. Total of 34 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 80,568,000; New Mexico 2,280,000; Arizona 7,140,000; California 600,000; Mexico 78,660,000. (Anim. Health Div.).

FACE FLY (Musca autumnalis) - WASHINGTON - Population generally less on cattle throughout State. Probably due partly to recent cool weather. (Telford). CALIFORNIA - Increasing but varied considerably in local areas. Generally heavy in Del Norte, Humboldt, and Modoc Counties. Pinkeye infections generally up this year; definite correlation between natural spread of pinkeye and face fly difficult to make. Eyes "weeping" heavily. (Cal. Coop. Rpt.). Humboldt County is a new county record. (PPC). SOUTH DAKOTA - Light, up to 2 per face, on small herd of Herefords east of Murdo, Jones County. This is a new county record. (Jones). MISSOURI - Averaged 1.4, 1.9, 3.8, 4.5, 0.5, 3.7, and 1.0 per cow (10-cow samples) on 7 central area herds. (Thomas). ILLINOIS - Average per face by district: Southeast 8, west 9, southwest 10, northwest 6, and west-southwest 23. (Ill. Ins. Rpt.). WEST VIRGINIA - Ranged 10-50 (average 27) per face on adult cattle. (Dorsey). MARYLAND - Continues troublesome in central area. Adults as high as

50 per face on 50 dairy cattle near Walkersville, Frederick County. (U. Md., Ent. Dept.).

HORN FLY (*Haematobia irritans*) - WYOMING - Ranged 40-300 (average 105) per head on beef cattle in 6 herds in Fremont and Big Horn Counties. (Parshall). OKLAHOMA - Heavy on cattle in Mayes County; moderate in Cleveland and Ellis Counties. (Okla. Coop. Sur.). MISSOURI - Averaged 287.0, 407.5, 295.0, 243.5, 407.5, 86.0, and 6.7 per cow (10-cow samples) on 7 central area herds. Lowest count from treated herd. (Thomas). ILLINOIS - Average per head by district: Southeast 551, west 83, southwest 338, northwest 84, and west-southwest 111. (Ill. Ins. Rpt.). WISCONSIN - Numerous; moderate to severe annoyance in Price, Clark, and Jefferson Counties. (Wis. Ins. Sur.). WEST VIRGINIA - Noticeable increase over previous weeks, ranged 20-100 (averaged 60) per square foot on withers of adult cattle. (Dorsey). MARYLAND - Up to 50 per head on 26 dairy cattle near Woodsboro, Frederick County. (U. Md., Ent. Dept.).

STABLE FLY (*Stomoxys calcitrans*) - ILLINOIS - Average per head by district: Southeast 3, west 4, southwest 8, northwest 0, and west-southwest 32. (Ill. Ins. Rpt.). WISCONSIN - Continued numerous and annoying to cattle in most counties. (Wis. Ins. Sur.).

TABANID FLIES - CALIFORNIA - Unusual numbers of horse flies this season in Modoc, El Dorado, and Mono Counties. Swarms of 15-30 per head not unusual. In El Dorado County flies massed on animals' faces at hairline of muzzle to get moisture since cows and horses did not react as if flies were biting. (Cal. Coop. Rpt.).

AMERICAN DOG TICK (*Dermacentor variabilis*) - ALABAMA - Becoming more of problem on people walking in underbrush and pastures in Macon, Lee, and Russell Counties. Heavy on dogs in Lee County. (Barwood, Chapman).

HOUSEHOLDS AND STRUCTURES

CRICKETS - WISCONSIN - Large numbers of adults entering houses and other buildings in Dane and Walworth Counties. Counts of 15-20 per square yard not unusual along base of buildings. (Wis. Ins. Sur.). CALIFORNIA - Many complaints of *Gryllus* spp. in homes, businesses, and warehouses in Sacramento, Colusa, and Yolo Counties. Normally not problem in northern area but unusual numbers which developed this summer creating nuisance. In desert areas of Riverside and Imperial Counties problem not developing as usual; usually millions migrate into cities, particularly after rains. (Cal. Coop. Rpt.).

STORED PRODUCTS

A DARKLING BEETLE (*Tenebrio* sp.) - NORTH DAKOTA - Adults evident in stored grain at Amidon, Slope County; controls applied. (McBride).

BENEFICIAL INSECTS

LADY BEETLES - COLORADO - Larvae, pupae, and adults of *Hippodamia convergens* and other species very numerous in alfalfa and cornfields; up to 4 per corn plant. (Johnson).

GREEN LACEWINGS (*Chrysopa* spp.) - COLORADO - All stages numerous on corn and alfalfa in State. (Johnson).

DAMSEL BUGS - COLORADO - All stages numerous on alfalfa in State. (Johnson). WYOMING - *Nabis* spp. averaged 32 per 100 sweeps on alfalfa in Fremont, Park, Big Horn, and Hot Springs Counties. (Parshall).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - In High Plains, infestations light in Martin County, generally heavy in Mitchell County, and up to 35 percent in Garza County. (Almand, Aug. 27). For Boll Weevil in other areas see page 861.

CEREAL LEAF BEETLE (Oulema melanopus) - MICHIGAN - Population dynamics survey indicated heavy numbers in Shiawassee, Allegan, and Jackson Counties during July. Collected 10,000 larvae per 100 sweeps in one Shiawassee County field. Larvae disappeared by end of July and summer adults evident. Survey negative in Upper Peninsula. Anaphes flavipes (a mymarid wasp released in 1967) recovered in Berrien County for fourth recovery location in State. (PPC Cent. Reg.).

GRASSHOPPERS - MISSOURI - Mainly Melanoplus femurrubrum moderate to severe, 8-35 per square yard, on alfalfa and other forage legumes in northwest area. (Munson). NEBRASKA - Mostly Melanoplus spp. 10-18 per square yard on corn and sorghum margins in southeast. Some damage to row crops in Otoe and Nemaha Counties. (Roselle). SOUTH DAKOTA - Light in parts of most northwestern counties. Outside of few "hot spots," heavy infestations occurred along Elk Creek in southwestern Meade County (8+ per square yard) and in alfalfa fields in northwestern Dewey County (averaged 10 and up to 30 per square yard). Main species included M. differentialis, M. bivittatus, and M. femurrubrum. Infestations in cropland areas most common on alfalfa and wild sweetclover with some light infestations on sorghum and corn. Many nymphs still found in areas surveyed. (Jones). NORTH DAKOTA - M. bivittatus about 90 percent in adult stage; females laying eggs in southern Cass County. M. femurrubrum only 60 percent adults; eggs not evident in females. Some light marginal damage to soybeans and late flax adjacent to alfalfa where M. bivittatus dominant and marginal numbers 10 or more per square yard. (Brandvik). MINNESOTA - Annual fall survey in progress. Numbers decreased somewhat compared with 1967. Noneconomic, 2 or less per square yard, in all southeast area fields. Mostly third and fourth instars 9 per square yard in Norman County field. Economic, 8-35 per square yard, in several fields in Stearns, Meeker, and Kandiyohi Counties. M. femurrubrum predominant in all above areas. (Minn. Ins. Rpt.). WISCONSIN - About 80 percent full grown in sandy soil areas of State. Only about 1 percent of females examined contained eggs, but mating well underway. Some light feeding on marginal rows of corn with some silk clipping. Only few "hot spots" with up to 30 per square yard noted. Parasitism low. (Wis. Ins. Sur.).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - SOUTH CAROLINA - Adults medium in parking lot at Rinini, Sumter County, for a new county record. Collected by H. Belson August 9. Det. by D.R. Smith. (PPC).

MEXICAN FRUIT FLY (Anastrepha ludens) - CALIFORNIA - Single marked male in trap at San Juan Capistrano, Orange County. Considerable distance from release point on Mexican border. Probably represents a "hitchhiker" rather than natural flight. (Cal. Coop. Rpt.).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - Eighth sterile male in Kern County August 16 from normally baited trap at Comanche Point. No native moths found to date during 28,392 trap inspections. Over 100,000 bolls checked since July with no larvae found. Released 239,510 sterile moths by air drop. (Cal. Coop. Rpt.). NEVADA - Collected 11 males in 2 sex lure traps and 1 larva from green boll August 21 in 40-acre field in Moapa Valley, Clark County. (Yamashita). NEW MEXICO - Boll counts do not reveal any larvae present in southern Dona Ana County. (N.M. Coop. Rpt.).

WHITE-FRINGED BEETLES (Graphognathus spp.) - ALABAMA - Adults numerous on lawn at Ranburne, Cleburne County. (Farrington).

WHITE GARDEN SNAIL (Theba pisana) - CALIFORNIA - Summer phase of eradication project ended with repeat inspection of two blocks of 48 properties. No further evidence of live snails. Project activities to be resumed in November. (Cal. Coop. Rpt.).

WOOLLY WHITEFLY (*Aleurothrixus floccosus*) - CALIFORNIA - Post-treatment inspections of 40 randomly selected blocks in San Diego, San Diego County, showed 25 percent of blocks still infested. On these blocks, 55 plants of 1,953 inspected are infested. All data preliminary. Collected from pomegranate tree (*Punica granatum*) for new host record in State. (Cal. Coop. Rpt.).

HAWAII INSECT REPORT

Turf, Pasture - All stages of a GRASS WEBWORM (*Herpetogramma licarsisalis*) medium in 50-acre pasture at Ulupalakua, Maui, at 2,000 feet elevation. Larval damage moderate in patches up to an acre. Parasitism by *Trichogramma semifumatum* (a minute egg parasite) about 80 percent compared with 40 percent in early July. Adults of *Eucelatoria armigera* (a tachina fly), *Casinaria infesta* (an ichneumon wasp), and *Trathala flavoorbitalis* (an ichneumon wasp) common in pasture. (Miyahira).

Corn, Sorghum - DRIED-FRUIT BEETLE (*Carpophilus hemipterus*) and a NITIDULID BEETLE (*C. humeralis*) extremely heavy in some ears of sweet corn at Makaha, Oahu; attracted to kernels damaged by corn earworm. (Greenwell). CORN PLANTHOPPER (*Peregrinus maidis*) heavy, mostly nymphs, in leaf sheaths of unsprayed field corn at Kaaawa, Oahu. Nymphs and adults of *Cyrtorhinus lividipennis* (a predacious capsid bug) abundant amid planthoppers. (Funasaki). CORN LEAF APHID (*Rhopalosiphum maidis*) heavy between leaf sheaths of sorghum used as windbreaks at Waianae, Oahu; negligible in corn throughout island. (Higa, Funasaki).

General Vegetables - Larvae and adults of LEAF MINER FLIES (*Liriomyza* spp.) severe on yard-long beans, tomato, cucumber, mustard cabbage, and snap beans in various farms on Oahu; heavy on watermelon at Waianae and Kahuku. Heavy on older leaves of cucumber at Anini, Kauai. (Sato et al.). TARO LEAFHOPPER (*Tarophagus proserpina*) trace to light in most commercial taro on Oahu. Adults 0-2 per leaf-stem at Kahaluu and 0-3 at Waiahole. Light on Oahu past 9 months. Nymphs and adults of a COREID BUG (*Alydus pilosulus*) heavy and feeding on bean pods in backyard planting at Makawao, Maui. Det. by M. Chong. This is a new island record. (Miyahira).

Ornamentals - Adults of a NITIDULID BEETLE (*Conotelus mexicanus*) up to 3-4 per chrysanthemum flower at Kula, Maui, at 3,600 feet elevation. (Hori).

Beneficial Insects - Adults of TACHINA FLIES (*Trichopoda pennipes* and *T. pennipes* var. *pilipes*) moderate in pastures and backyard gardens at Makawao and Ulupalakua, Maui, at 1,600-2,000 feet elevation. (Ah Sam). Larvae of a TORTRICID MOTH (*Apotoforma* sp.) heavy on blackberry terminals at Kokee, Kauai. (Sugawa).

Miscellaneous - Five adults of a GRASSHOPPER (*Oedaleus abruptus*) found on dry grass in localized area at Hickam Air Force Base, Honolulu, Oahu. First detectable numbers since initial eradication completed August 9. (Olson). Surveys for a RHOPALID BUG (*Jadera haematoloma*) continued on Oahu. Mating observed only on balloon vine to date. Nymphs and adults up to 12 per fruit (heavy) at Waianae and averaged 3.5 per fruit (moderate) at Ewa; adults averaged 0.2 per fruit (light) in 2-acre area at Pearl City. This species now known to occur in airport area, Pearl City, Waipahu, Ewa, and Waianae. (Yamamoto, Funasaki).

CORRECTIONS

CEIR 18(19):395 - GIANT BARK APHID (*Longistigma caryae*) - MARYLAND - "Ranged 400-500 per colony..." should read "Ranged 400-500 aphids..." (U. Md., Ent. Dept.).

CEIR 18(34):813 - STINK BUGS - MISSOURI - *Nezara viridula* should be *Acrosternum hilare*.

CEIR 18(34):814 - BOLL WEEVIL (*Anthonomus grandis*) - SOUTH CAROLINA - Overwintered adults in 2 male traps 18; 2,856 to date should read... in 6 male traps 8; 2,856 to date. (Taft et al.).

INSECT DETECTION

New State and District of Columbia Records

WESTERN CORN ROOTWORM (Diabrotica virgifera) - INDIANA - Specimen collected in corn northeast of Brook, Newton County, August 28, 1968, by G.E. Gould. (p. 858).

A MEALYBUG (Eurycoccus blanchardii) - MARYLAND - Collected on hickory root at Silver Spring, Montgomery County, June 23, 1968, by L.M. Russell. Det. by H.L. McKenzie. (p. 866).

CALICO SCALE (Lecanium cerasorum) - DISTRICT OF COLUMBIA - Collected on Carpinus betulus by H.V. Wester April 15, 1968. Det. by L.M. Russell. Confirmed by R.F. Wilkey. (p. 867).

New County and Island Records

EUROPEAN CORN BORER (Ostrinia nubilalis) - ALABAMA - Baldwin County. (p. 856).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - NEBRASKA - Adams, Kearney, Gosper, Hayes, Logan, Custer, Valley, and Sherman Counties. (p. 857).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - SOUTH DAKOTA - Jackson County. (p. 857). KANSAS - Grant County. (p. 858).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - MARYLAND - Harford County. KANSAS - Sumner County. (p. 858).

MEADOW SPITTLEBUG (Philaenus spumarius) - MISSOURI - Gentry County. (p. 859).

ALFALFA WEEVIL (Hypera postica) - WISCONSIN - Iowa and Lafayette Counties. (p. 859).

AN ARMORED SCALE (Unaspis citri) - FLORIDA - Hendry County. (p. 866).

AZALEA BARK SCALE (Eriococcus azaleae) - MARYLAND - Montgomery County. (p. 866).

A SLUG (Arion ater) - WASHINGTON - Spokane County. (p. 866).

MIMOSA WEBWORM (Homadaula anisocentra) - OKLAHOMA - Creek and Hughes Counties. IOWA - Warren and Cedar Counties. (p. 866).

A BARK BEETLE (Leperisinus hoferi) - ARIZONA - Maricopa County. (p. 866).

FACE FLY (Musca autumnalis) - CALIFORNIA - Humboldt County. SOUTH DAKOTA - Jones County. (p. 867).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - SOUTH CAROLINA - Sumter County. (p. 869).

A COREID BUG (Alydus pilosulus) - HAWAII - Maui Island. (p. 870).

Insect Detection in Canada

Single specimens of CEREAL LEAF BEETLE (Oulema melanopus) collected in late oats in Elgin, Kent, and Middlesex Counties, Ontario, during first week of August. All collections were some distance from through transport routes and appeared to be result of natural spread. (G.S. Brown).

RIGHT TRAP COLLECTIONS

County	City	State	Year	Population	Area	Population Density	Area Density	Population per Square Mile	Area per Square Mile	Population per Square Mile	Area per Square Mile
FLORIDA	Monticello	8/22-28	2BL	31	11	8.0	1.8	1.0	1.0	1.0	1.0
KANSAS	Garden City	8/27	BL	7	1	11.0	2.0	1.0	1.0	1.0	1.0
	Wichita	8/25	BL	1	1	11.0	2.0	1.0	1.0	1.0	1.0
MISSISSIPPI	Stoneville	8/24-30	2BL	11	12	1.94	1.0	1.0	1.0	1.0	1.0
MISSOURI	Portageville	8/24-30	1.3	6	1.0	1.0	1.0	1.0	1.0	1.0	1.0
NEW JERSEY	Aura	8/22-28	BL	67	22	3.0	1.0	1.0	1.0	1.0	1.0
	Evesboro	8/22-28	BL	6	22	3.0	1.0	1.0	1.0	1.0	1.0
	Plainsboro	8/22-28	BL	11	22	3.0	1.0	1.0	1.0	1.0	1.0
	Seabrook	8/22-28	BL	218	22	11.0	1.0	1.0	1.0	1.0	1.0
NORTH DAKOTA	Fargo	8/23	2	9	20	1.0	1.0	1.0	1.0	1.0	1.0
OHIO	Hilliard	8/22-28	BL	75	1	1.0	1.0	1.0	1.0	1.0	1.0
	Wooster	8/22-28	BL	30	1	1.0	1.0	1.0	1.0	1.0	1.0
SOUTH DAKOTA	Brookings	8/27-29	BL	25	160	122	119	1.0	1.0	1.0	1.0
TEXAS	Waco	8/24-30	BL	25	160	122	119	1.0	1.0	1.0	1.0
WISCONSIN	Madison	8/18-27	BL	23	6	3.0	1.0	1.0	1.0	1.0	1.0

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September 13, 1968

Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

All reports and inquiries pertaining to this release, including the mailing list, should be sent to:

Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG continues severe on sorghum in many areas of California; infestation continues in some areas of southeastern Colorado, western Oklahoma, and South Dakota. CORN EARWORM expected to be serious on corn in fall on Eastern Shore of Virginia; major pest of soybeans in eastern South Carolina. (pp. 875-876).

EUROPEAN CORN BORER larvae extremely heavy on corn throughout Maryland; damaging corn in Maine and Wisconsin; moth flights continue heavy in southern Delaware. (pp. 877,882). CORN ROOTWORM surveys reported in North Dakota, Ohio, Wisconsin, and Minnesota. (pp. 877-878).

MEXICAN BEAN BEETLE heavy on soybeans in Middlesex County and increasing to severe levels in untreated soybeans in Nansemond County, Virginia. SPIDER MITE damage widespread in soybeans on Eastern Shore of Virginia; problem on cotton in much of South Carolina. (pp. 880-881).

BOLL WEEVIL continues heavy throughout Alabama and southern Georgia. BOLLWORM light trap collections remain very high at Florence, South Carolina. COTTON LEAF PERFORATOR major problem on cotton in Maricopa County, Arizona. (pp. 880-881).

CABBAGE LOOPER heavily defoliated commercial tomato plantings in Tipton County, Indiana; infestation one of heaviest in years on cabbage in Columbia County, Wisconsin; light trap collections continue very high on Eastern Shore of Virginia; all stages extremely abundant on crucifers in New Jersey. (pp. 882-883).

CODLING MOTH adults established record-high total for period at Vincennes, Indiana. (p. 884). SPIDER MITES extremely heavy in apple orchards in De Baca County, New Mexico, and increased to unprecedented levels in orchards in Maine. (p. 885).

Epidemic WESTERN PINE BEETLE outbreaks occurred in local areas covering 144,000 acres of Shasta National Forest, California. (p. 886).

Four confirmed MALARIA cases in Lee County, Alabama; first in State since 1960. (p. 886).

PINK BOLLWORM flights heavy along Colorado River in Yuma County, Arizona. (p. 889).

Detection

New State records include a PAMPHILIID SAWFLY and ELM LEAF BEETLE in Florida (p. 886); 3 DEER FLIES in Nevada (pp. 887-888); and a MARCH FLY in West Virginia and ASIATIC OAK WEEVIL in Wisconsin (p. 888).

For new county records see page 890.

Special Reports

Distribution of Alfalfa Weevil (map). (p. 892).

Pink Bollworm Quarantine Map. Centerfold.

Reports in this issue are for week ending September 6 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING SEPTEMBER 9

HIGHLIGHTS: Cool autumn weather prevailed over most of the Nation. Very little rain fell west of the Rockies. Precipitation totals east of the Rockies ranged widely, but most areas received one to two inches.

PRECIPITATION: Light rain fell in the northern Rockies, northern Great Plains, and the Northeast early in the week. Much heavier and more widespread showers occurred at midweek, however, in the humid gulf air in advance of a front that stretched from the Great Lakes to the southern Great Plains. Amounts ranged widely from light sprinkles to several inches. Especially heavy rains fell in eastern Texas and in Louisiana where on Thursday morning several stations registered 24-hour totals exceeding 4 inches. Shermans Dale, Pennsylvania, registered 4.85 inches on Friday morning. Most of the area from the Great Lakes to the Gulf of Mexico and eastward to the Atlantic coast received light to moderate rain from Thursday afternoon to Friday forenoon. The weekend brought sunny and cool weather to the East but turbulent, thundery weather to the northern Great Plains. Thunderstorms occurred from Montana to Wisconsin and southward to Kansas. Most of the thunderstorms produced only light showers, but many were accompanied by gusty winds and hail. Very little rain fell west of the Rockies and wide areas from Washington to southern California and western Arizona received no rain.

TEMPERATURE: Temperatures last week averaged above normal in the Pacific States, below normal from the Great Basin to the Appalachians, and near normal near the Great Lakes and along the Atlantic coast. Warm and moist air covered the central Great Plains and most of the South early in the week. Afternoon temperatures reached the 80's in central and eastern South Dakota, and the 90's from southwestern Nebraska to central Oklahoma. Cool air pushed in from the North and by midweek the warm air had retreated to southern Kansas and Missouri and afternoon temperatures in the 50's and 60's were common over the northern Great Plains. Minimums dropped to below freezing in western Wyoming and in the Colorado Rockies on several mornings in the latter half of the week. Texas warmed quickly over the weekend with maximums mostly in the 90's by Sunday, but cool temperatures continued over the northern Great Plains. No marked temperature trends occurred in the Far West and in the East. (Summary supplied by Environmental Data Service, ESSA.)

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

GREENBUG (*Schizaphis graminum* (In broad sense))* - CALIFORNIA - Severely damaged sorghum in many locations; species previously rare in State. (Cal. Coop. Rpt.). ARIZONA - Averaged 14 per sorghum plant at San Simon, Cochise County. (Ariz. Coop. Sur.). UTAH - Damaging feed sorghums in all fields examined in St. George and Washington area, Washington County; purplish discoloration noted on lower leaf surfaces. (Knowlton, Davis, Aug. 20). COLORADO - Noneconomic on corn in State. Infested all sorghum checked in Prowers, Bent, Otero, Crowley, and Pueblo Counties, but decreased rapidly in most fields. Small wasp parasitized up to 75-90 percent of aphids in many fields. Lady beetles reduced aphid populations. (Schweissing, Johnson). OKLAHOMA - Averaged 1,500 per plant in broomcorn field treated 3 weeks ago in Stephens County. Light on sorghum in Custer and Washita Counties. (Okla. Coop. Sur.). NEBRASKA - Trace numbers in Cheyenne County cornfield. (Andersen, Keith). SOUTH DAKOTA - Decreased in most areas past 2 weeks; still light in sorghum or milo fields. May infest winter wheat plantings in fall. (Jones).

ARMYWORM (*Pseudaletia unipuncta*) - MARYLAND - Moths averaged 11 per night in blacklight trap at Centreville, Queen Annes County. (U. Md., Ent. Dept.). NEBRASKA - Light, infested less than 1 percent of ears in cornfield in Box Butte County. (Andersen, Keith).

ASTER LEAFHOPPER (*Macrosteles fascifrons*) - COLORADO - Averaged 3 per 20 square feet in lettuce in Pueblo and Otero Counties. (Schweissing).

BEET LEAFHOPPER (*Circulifer tenellus*) - COLORADO - Adults 0-20 per 100 sweeps on sugarbeets in Arkansas Valley and on tomatoes in Pueblo, Crowley, Otero, and Prowers Counties. (Schweissing).

CORN EARWORM (*Heliothis zea*) - MAINE - Infestations substantial on untreated sweet corn in several areas. (Boulanger, Sept. 4). NEW JERSEY - Unusually light on sweet corn for time of year. (Ins.-Dis. Newsltr.). MARYLAND - Moth collections totaled 42 August 27 to September 2. Larvae light on corn in central area. Infested less than 30 percent of corn on Eastern Shore to date; infested 96 percent of 40-acre field on Love Point. (U. Md., Ent. Dept.). VIRGINIA - Damage to untreated sweet corn made all ears unmarketable at Painter, Accomack County. About 50 percent of corn ears infested despite best treatments. One of worst autumns predicted for corn based on light trap collections and potential moth flights. (Hofmaster, Aug. 28). Medium to nearly full-grown larvae in many soybean fields in Charles City, Henrico, and Chesterfield Counties as of August 30. Larvae up to 3 per row foot; mostly 1 per row foot. (Allen). First sprays applied to soybeans August 29; several hundred acres sprayed to date. Larvae ranged from 1 per 3 or 4 locations to 2-3 per row foot. Most late soybeans susceptible in Westmoreland County. (Ptucha). Ranged up to 8 per row foot with severe damage in few scattered soybean fields in Sussex County; larvae light in most fields. Larvae light in soybeans in Nansemond and Southampton Counties. Buildup possible next few weeks. (Allen). Foliar damage noneconomic on peanut vines in Nansemond County. (Smith, Aug. 30). MICHIGAN - Moths collected in blacklight traps during week by county: Lenawee 12, Newaygo 8, Manistee 3. Numerous enough to cause concern in late sweet corn in State. (Janes, Newman, Sept. 3). INDIANA - Adults active throughout State. Moths increased in light traps in southwestern district and in central third of State. Adult trap totals August 28 to September 3 by county: Gibson 86, Lawrence 4, Jennings 8, Marion 24, Tippecanoe 32, and Porter 15. (Huber). WISCONSIN - Larval infestations on sweet corn minimal compared with European corn borer despite heavy flight; ear infestations up to 8 percent in some Dane County fields. Infested field corn as far north as Wausau, Marathon County. Eggs found in corn silks for over a week in Fond du Lac County. (Wis. Ins. Sur.). NEBRASKA - First and second instars light, 0-3 per ear, in Deuel County corn; less than 1 percent of plants infested.

* According to recent taxonomic studies by L.M. Russell. This aphid on sorghum appears to be this species.

Negative in 17 cornfields checked in Cheyenne, Kimball, Banner, Sioux, Box Butte, and Dawes Counties. (Andersen, Keith). COLORADO - Larval infestations of this species and *Spodoptera frugiperda* (fall armyworm) ranged 15-85 (average 41) percent in Arkansas Valley. Damage confined to ear tips. Controls neither effective nor economical on field corn. *H. zea* 0-2 per 50 row feet at Roggen, Weld County. (Schweissing, Johnson). UTAH - Damaging corn tassels and ears in Washington County. (Huber, Knowlton, Aug. 20). SOUTH CAROLINA - Major pest of soybeans in line from Columbia to coast. Damage increasing in Lancaster, Lexington, Greenwood, and Edgefield Counties week of September 4. Larvae in okra pods on property at Latta, Dillon County. (Thomas, Nettles). ALABAMA - Damaging some soybeans in Bibb, Wilcox, Marengo, Covington, Geneva, Washington, and Conecuh Counties. Controls being applied in most of these counties. (Odom et al.). MISSISSIPPI - Fourth instars about 1 per 3 row feet on 30 acres of soybeans in Yazoo County. Fourth and later instars less than 1 per 3 row feet in all 20 soybean fields surveyed in Quitman, Tallahatchie, Coahoma, and Leflore Counties; damage light. Third and later instars up to 4-5 per head on 150 acres in 3 milo fields in Tallahatchie County; damage heavy. (Dinkins). ARKANSAS - Very light on soybeans; only occasional larva found in Hempstead and Lafayette Counties. (Boyer). OKLAHOMA - Ranged up to 5 per head in grain sorghum in Payne County. (Okla. Coop. Sur.).

CORN LEAF APHID (*Rhopalosiphum maidis*) - MARYLAND - Decreasing on corn statewide. (U. Md., Ent. Dept.). OKLAHOMA - Averaged 150 per plant on broomcorn in Stephens County. (Okla. Coop. Sur.). COLORADO - Noneconomic on corn in State. Infested all sorghum checked in Prowers, Bent, Otero, Crowley, and Pueblo Counties, but decreased rapidly in most fields. Lady beetles reduced aphid populations. (Schweissing, Johnson). CALIFORNIA - Medium on 80-acre sorghum planting in Imperial County. (Cal. Coop. Rpt.).

PAINTED LADY (*Vanessa cardui*) - UTAH - Larval damage light in relation to heavy spring adult migration. (Knowlton, Aug. 20).

POTATO LEAFHOPPER (*Empoasca fabae*) - MARYLAND - Still decreasing in State. Averaged 10 per sweep in 16 acres of alfalfa near Walkersville, Frederick County; up to 20 per sweep in 10 acres of alfalfa near Wye Mills, Queen Annes County. (U. Md., Ent. Dept.). WISCONSIN - Averaged about 5 per linear foot in lima beans despite treatments; heavy populations in alfalfa did not materialize. (Wis. Ins. Sur.).

POTATO PSYLLID (*Paratrioza cockerelli*) - COLORADO - Ranged 0-5 per 100 sweeps on tomatoes in Arkansas Valley. (Schweissing). UTAH - Adults 0-2 per 10 sweeps on rabbitbrush in Washington and Millard Counties. (Knowlton, Aug. 20).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - COLORADO - Increasing, 0-3,000 per 100 sweeps, on alfalfa; heaviest in Crowley County and in Big Bend area of Bent County. (Schweissing). UTAH - Light in all alfalfa examined in Washington County as of August 20. (Davis, Knowlton). Damage to western Millard County alfalfa seed and forage crops less severe than in 1966, but much more damaging than in 1967. (Knowlton, Aug. 29).

TOBACCO BUDWORM (*Heliothis virescens*) - MICHIGAN - Five moths collected last week at Newaygo and Manistee County blacklight stations. Insufficient time for damaging population buildup in State. (Janes, Sept. 3).

TOBACCO HORNWORM (*Manduca sexta*) - RHODE ISLAND - Numerous larvae on tomatoes; some larvae with braconid cocoons. (Brooks).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - MAINE - Damage appreciable on sweet and field corn in numerous treated areas. (Boulanger, Sept. 4). MARYLAND - Continues extremely heavy on corn statewide; major corn pest in 1968. Heaviest in central area. Infestations 60-100 percent in corn in Frederick County; most fields completely infested. Larvae up to 15 per plant in completely infested cornfields. Larvae 1-10 per corn plant on Eastern Shore. Flights decreased during week; moths averaged 6+ per night. (U. Md., Ent. Dept.). OHIO - Second-generation larvae heavy August 19-28; damaged ears and stalks of corn will be more common than usual this fall over most of State. (Rose). INDIANA - Light trap catches increased sharply last week throughout State. Problem may develop in late sweet corn, especially in east-central and southeastern districts. Adult trap totals August 28 to September 3 by county: Gibson 6,025, Lawrence 64, Jennings 13, Marion 160, Tippecanoe 446, and Porter 83. (Huber). MICHIGAN - Moth activity declined past week. Egg laying abundant enough to require controls on sweet corn. (Jones, Sept. 3). WISCONSIN - Larval numbers as high or higher than in past years. Third to fifth instars common in sweet corn ears in southern area; infestations up to 36 percent in some fields. Much more stalk breakage in field corn than in past years in Waupaca, Portage, Shawano, Wood, and Marathon Counties. Much greater threat to sweet corn than corn earworm thus far. (Wis. Ins. Sur.). NORTH DAKOTA - Larvae ranged 4-108 (average 48) per 100 plants in Cass County; plant infestations ranged 2-36 (average 18) percent. No pupation of first-brood larvae. (Kaatz). ALABAMA - Larvae badly damaged 2-acre cornfield in Colbert County. (Baswell, Goins).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - NEBRASKA - Collected on corn in Seward, Deuel, Cheyenne, Kimball, Banner, Sioux, and Dawes Counties for new county records. Negative in 7 cornfields in Box Butte County. Fourth and fifth instars generally light, 1-2 per plant, on 1-2 percent of corn plants in preceeding counties. Infested 20-25 percent of plants in one Deuel County cornfield. (Andersen, Keith). Larvae heavy, 1-10 per ear, on nearly 100 percent of plants in Scotts Bluff County cornfield. (Hagen). COLORADO - Larvae 0-5 per 50 row feet in corn at Roggen, Weld County. (Johnson).

SORGHUM WEBWORM (Celama sorghiella) - OKLAHOMA - Ranged up to 55 per head in grain sorghum in Payne County; heavy in isolated areas in Marshall County. (Okla. Coop. Sur.). TEXAS - Heavy on sorghum at Pittsburg, Camp County. (Cates).

FALL ARMYWORM (Spodoptera frugiperda) - ALABAMA - Larvae, probably this species, damaged late corn in Autauga and Dallas Counties. (Scott, Alsobrook). WISCONSIN - Half-grown larvae not very common in corn ears in north-central area. (Wis. Ins. Sur.).

VARIEGATED CUTWORM (Peridroma saucia) - WISCONSIN - Larvae second most abundant to European corn borer in sweet corn tips at Dane County location. (Wis. Ins. Sur.).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - MISSOURI - Larvae collected on corn in Dent and Carter Counties for new county records. (Munson).

CORN ROOTWORMS (Diabrotica spp.) - NORTH DAKOTA - D. virgifera adult survey negative in corn in Richland, Ransom, and Sargent Counties. D. undecimpunctata howardi adults ranged up to 40 per 100 plants in cornfields in preceeding three counties. (Kaatz). MINNESOTA - Adult survey completed in all major corn-growing counties in State. (Minn. Ins. Rpt.). OHIO - Adult survey made in 157 cornfields in 53 counties August 19-28. D. longicornis averaged 25,802 per acre and D. undecimpunctata howardi 346 per acre. D. longicornis averaged 1.44 per plant. D. longicornis generally heaviest in southwestern area; 50,000+ per acre in Madison, Montgomery, Preble, Butler, Fayette, and Champaign Counties. D. undecimpunctata howardi most common in south-central area. D. longicornis numbers similar to 1967 levels, but D. undecimpunctata howardi less than half as numerous as last year. (Rose). WISCONSIN - D. virgifera found throughout

corn-growing area of State; increased considerably in some sandy soil areas. D. longicornis adults continue numerous in corn in Dane, Rock, Columbia, and Waukesha Counties: much feeding on corn ear tips in some fields. (Wis. Ins. Sur.). MARYLAND - D. undecimpunctata howardi adults infested 40 percent of corn silks in 40-acre planting on Love Point, Queen Annes County. (U. Md., Ent. Dept.).

DESERT CORN FLEA BEETLE (Chaetocnema ectypa) - UTAH - Moderate and damaging corn and sorghum in Dixie area, Washington County. (Huber, Knowlton, Aug. 20).

DUSKY SAP BEETLE (Carpophilus lugubris) - MARYLAND - Infested 60 percent of 100-acre corn planting on Kent Island, Queen Annes County. (U. Md., Ent. Dept.).

BANKS GRASS MITE (Oligonychus pratensis) - NEBRASKA - Heavy in 3 cornfields in Cheyenne and Sioux Counties. Noneconomic in 16 cornfields in Deuel, Cheyenne, Kimball, Banner, Sioux, Box Butte, and Dawes Counties. (Andersen, Keith).

SPIDER MITES - NEW MEXICO - Heavy on grain sorghum at Roswell, Chaves County. (Mathews). Light to heavy on field corn in Estancia Valley, Torrance County. (Heninger).

TURF, PASTURES, RANGELAND

GREAT BASIN TENT CATERPILLAR (Malacosoma fragile) - CALIFORNIA - Infestations increased 4 times over 1967 level in bitterbrush and whitethorn in Tahoe National Forest, Truckee area, Lassen National Forest, Hat Creek and Almanor districts, and Plumas National Forest, Westwood area. (Cal. Coop. Rpt.).

SOD WEBWORMS - DELAWARE - Severe in home lawns throughout New Castle and Kent Counties. (Boys, Sept. 5). MARYLAND - Damage heavy to lawns in Beltsville, Prince Georges County. (U. Md., Ent. Dept.). WEST VIRGINIA - Crambus sp. larvae abundant and causing much damage to lawns in some sections of Morgantown. (Weaver).

FALL ARMYWORM (Spodoptera frugiperda) - ALABAMA - Larvae in grass hayfields in Choctaw County necessitated early hay cutting in order to salvage some fields. Light past 30 days and much lighter than in 1967 in most southern and central areas. May become serious throughout September and October. (Sexton et al.).

CHINCH BUGS (Blissus spp.) - VIRGINIA - Severe in lawn at Virginia Beach and in Fairfax County. (Weidhass, Aug. 23). DELAWARE - B. hirtus damaging lawns in New Castle County. (Boys, Sept. 5).

BLUEGRASS BILLBUG (Sphenophorus parvulus) - UTAH - Damage greatly increased on lawns in Salt Lake City and Holladay area, Salt Lake County. (Knowlton, Aug. 29).

FIELD CRICKETS (Gryllus spp.) - ARIZONA - Feeding on Bermuda grass seed heads at Yuma, Yuma County; controls planned. (Ariz. Coop. Sur.).

BERMUDAGRASS MITE (Aceria neocynodonis) - GEORGIA - Heavy on 2 Spalding County lawns. (Tippins, Aug. 30).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - MICHIGAN - Counts decreased, ranged 12-31 per 200 sweeps in 3 third-cutting alfalfa fields: indicates reduced emergence of 1968 brood. No larvae. (Janes, Sept. 3). COLORADO - Larvae per 100 sweeps ranged 0-800 on alfalfa in Arkansas Valley and 0-10 in Longmont area, Boulder County. Adults averaged 10-20 per 100 sweeps at Longmont. Leaf damage found in Pueblo County. (Schweissing, Johnson). WYOMING - Larvae 0-180 and adults 0-14 per 100 sweeps in second-growth alfalfa in Johnson, Converse, Crook, and Weston

Counties. (Parshall). UTAH - Larvae 0-2 per 10 sweeps in some Millard County alfalfa August 29. Currently adults 1 and larvae 3 per 10 sweeps in alfalfa at Lakepoint, Tooele County; larvae 2 per 10 sweeps at Erda. (Knowlton).

CLOVER ROOT CURCULIO (Sitona hispidulus) - OREGON - Adults averaged 1.5 per sweep in alfalfa field near Rainier, Columbia County; leaf damage 10-20 percent. (Brown).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - WISCONSIN - Adults continue numerous in alfalfa in Dane, Rock, Columbia, and Waukesha Counties. (Wis. Ins. Sur.).

PEA APHID (Acyrtosiphon pisum) - OREGON - Averaged 25-50 per sweep in small alfalfa pasture near The Dalles, Wasco County; few alates present. (Westcott). UTAH - Generally light in Millard County alfalfa; 2-10 per 10 sweeps most common. Ranged 25-75 per 10 sweeps in some succulent third-crop alfalfa. (Knowlton, Aug. 29). WYOMING - Ranged 30-200 (average 86) per 100 sweeps on alfalfa in Converse, Johnson, Crook, and Weston Counties. (Parshall). COLORADO - Counts per 100 sweeps on alfalfa ranged 100-4,000 in Pueblo, Crowley, Otero, Bent, and Prowers Counties and 100-500 in Boulder, Weld, and Larimer Counties. (Schweissing, Johnson). NEW MEXICO - Very light in alfalfa in Curry and Roosevelt Counties. (Nielsen). Light to moderate in Chaves County alfalfa. (Mathews).

MEADOW SPITTLEBUG (Philaenus spumarius) - ILLINOIS - Adult counts increased in 1968 over 1967 in two-thirds of counties surveyed. Ranged 0.3-3.0 per sweep. Counts in general increased from south to north. Highest counts per sweep in Stephenson (3.0), Lake (2.9), and Kane (2.8) Counties. (Ill. Ins. Sur.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Average per 100 sweeps in alfalfa by county: Yuma, 50 at Yuma; Pinal, 300 at Casa Grande; Graham, 300 at Safford; Cochise, 90 at San Simon. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - WYOMING - Nymphs and adults ranged 7-65 (average 28) per 100 sweeps on alfalfa in Converse, Johnson, Crook, and Weston Counties. (Parshall). UTAH - L. elisus and Lygus spp. numbers variable in western Millard County seed alfalfa; ranged 2-35 per 10 sweeps. Nymphs very numerous in some fields. (Knowlton, Aug. 29). COLORADO - Counts per 100 sweeps on alfalfa ranged 0-1,000 in eastern area and 0-40 (very light) in Weld, Boulder, and Larimer Counties. (Schweissing, Johnson). ARIZONA - Average per 100 sweeps in alfalfa by county: Cochise, 90 at San Simon; Graham, 250 at Safford; Pinal, 100 at Casa Grande; Yuma, 40 at Yuma. (Ariz. Coop. Sur.).

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Averaged 220 per 100 sweeps on alfalfa at Yuma, Yuma County; 1,400 per 100 sweeps in one field. (Ariz. Coop. Sur.). NEW MEXICO - Larvae averaged 3-12 per 25 sweeps in alfalfa at Ft. Sumner, De Baca County. (Nielsen).

ALFALFA CATERPILLAR (Colias eurytheme) - COLORADO - Larvae and adults numerous on alfalfa in Arkansas Valley; larvae 0-40 per 100 sweeps in Boulder, Weld, and Larimer Counties. (Schweissing, Johnson). UTAH - Generally light in Millard County alfalfa in 1968, but increased recently. Larvae per 10 sweeps on alfalfa ranged 2-7 (average 4) at Lakepoint and averaged 2 at Erda, Tooele County. (Knowlton, Sept. 6).

WESTERN FLOWER THRIPS (Frankliniella occidentalis) - UTAH - This species, Thrips tabaci, and other species still very numerous in western Millard County alfalfa seed fields. (Knowlton, Aug. 29).

SOYBEANS

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - VIRGINIA - Large larvae moderate in scattered locations in Charles City County August 28. Increasing to severe levels on untreated soybeans in Nansemond County and adjacent areas as of August 30; adults heavy in Middlesex County. Generally light in Sussex and Southampton Counties as of September 5. (Allen et al.). SOUTH CAROLINA - Generally non-economic in most fields in State. Controls applied to 217,450 acres during week. (Thomas, Sept. 4). ARIZONA - Averaged 1 per plant at Elfrida, Cochise County, (Ariz. Coop. Sur.).

GREEN CLOVERWORM (*Plathypena scabra*) - MARYLAND - Larvae ranged 3-6 per sweep on Eastern Shore; defoliation 10 percent on 100 acres near Chester, Queen Annes County. (U. Md., Ent. Dept.). VIRGINIA - Averaged 5 per row foot on untreated soybeans in Nansemond County and adjacent areas as of August 30. (Smith). Generally declining as beans mature in Nottoway and Dinwiddie Counties as of September 5. Moderate numbers still causing some leaf damage in Sussex and Southampton Counties. (Allen). MISSOURI - Light, 0-18 per yard of row, in south-east area. (Munson).

VELVETBEAN CATERPILLAR (*Anticarsia gemmatilis*) - VIRGINIA - Adults moderate with much defoliation in several Sussex County fields. (Allen).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - MARYLAND - Defoliation light to moderate statewide. (U. Md., Ent. Dept.).

STINK BUGS - SOUTH CAROLINA - Increasing in Allendale, Lexington, Hampton, Calhoun, and Barnwell Counties. (Thomas, Sept. 4).

SPIDER MITES - VIRGINIA - Damage widespread on Eastern Shore. Serious problem expected on soybeans unless available moisture helps recovery. (Hofmaster, Aug. 28). TENNESSEE - Some damage in southwestern area. (Locke).

PEANUTS

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - TEXAS - Some damage to peanuts in Gorman and De Leon sections of central area. Heavy damage in some fields, but numbers generally noneconomic. (Key, Hamman).

RED-NECKED PEANUTWORM (*Stegasta bosqueella*) - NEW MEXICO - Light to moderate on terminal growth in Portales area, Roosevelt County. (Nielsen).

A BURROWING STINK BUG (*Pangaeus bilineatus*) - TEXAS - Damage 6-23 percent in Pearsall area, Frio County. (Hamman).

COTTON

BOLL WEEVIL (*Anthonomus grandis*) - SOUTH CAROLINA - Decreasing at Florence. Larvae infested 0-54.6 percent of treated plots; adults 0-2 per 100 squares in treated plots. (Taft et al., Aug. 30). GEORGIA - Continued heavy throughout southern area. (Womack, Aug. 30). ALABAMA - Continues very heavy throughout State. Unfavorable dry weather caused heavy square and small boll shed in much of northern area. Feeding and egg laying increased in remaining small and large bolls. Large numbers migrated from mature cotton field to open pasture area at Pleasant Hill, Dallas County. (Cullpepper). TENNESSEE - Much damage to small bolls in late cotton in western area. Migration continues to late cotton in north. (Locke). MISSISSIPPI - Very light in northern delta area. Punctured squares found in 2 of 24 fields checked in Leflore, Tallahatchie, Quitman, and Coahoma Counties; 5 percent in one field and almost 100 percent in second field. Punctured squares 15 percent or higher (heavy) in 30 fields checked in Yazoo County. Squares becoming scarce in all fields throughout delta. (Dinkins).

ARKANSAS - Infested 3,192 (75.9 percent) of fields surveyed; 1,070 (25.4 percent) of fields above treatment level. Treated 870 fields. (Boyer, Barnes). OKLAHOMA - Infestations ranged 18-20 percent in Jefferson County and 2-8 percent in Marshall County. Heavy in Cotton County; moderate in Custer, Washita, and Garvin Counties; light in Blaine County. (Okla. Coop. Sur.).

BOLLWORMS (*Heliothis* spp.) - SOUTH CAROLINA - *H. zea* and *H. virescens* moths remain very high in light trap collections at Florence. Caught 4,307 *H. zea* and 74 *H. virescens* in light traps during period; 12,319 *H. zea* and 390 *H. virescens* taken to date. Larvae infested 0-4 percent of treated plots. (Taft et al., Aug. 30). Moth flight peaked over 2-week period; 3,400 taken in light trap August 17-23 and 4,500 collected August 24-30. Larvae damaged maturing bolls. (Sparks, Sept. 4). GEORGIA - Destroyed large bolls where controls stopped in southern area. (Womack, Aug. 30). ALABAMA - *H. zea* continued to infest fields where tender leaf and square growth occurs. Isolated and heavy numbers in Colbert, Marengo, Tuscaloosa, and Randolph Counties. (Baswell et al.). TENNESSEE - Much damage to all stages of bolls in late or rank cotton in western area. (Locke). MISSISSIPPI - *H. zea* and *H. virescens* heavy in several fields in Yazoo County; larvae up to 19 (average 8) per 100 plants. Egg infestations light, averaged 2 percent. Larvae lighter in northern delta area; mostly fourth or later instars found. Infestations averaged 5 percent with up to 10 percent on one farm. Egg infestations averaged 3 percent (light) on older cotton, but ranged up to 24 percent in one young field. (Dinkins). ARKANSAS - Primarily *H. zea* eggs and/or larvae in 2,614 (62.1 percent) of fields surveyed. Square damage in 2,742 (66.3 percent) of fields. Above treatment level in 471 (11.2 percent) of fields. Treated 996 fields for bollworm and additional 1,155 fields for boll weevil and bollworm. (Boyer, Barnes). OKLAHOMA - Percent fruit damage by county: Jackson 14-24; Greer 12-48; McClain 25; Grady 25; Marshall 10-50. Larvae ranged 14-35 per 100 terminals in Jefferson County. Light to moderate in Garvin, Blaine, Custer, and Washita Counties; heavy in occasional fields. (Okla. Coop. Sur.).

CABBAGE LOOPER (*Trichoplusia ni*) - SOUTH CAROLINA - Total of 131 moths taken in light trap collections during period at Florence; 4,608 taken to date. (Taft et al., Aug. 30). ARIZONA - Very light, 4 per 100 sweeps, in Graham and Maricopa Counties. (Ariz. Coop. Sur.).

COTTON LEAF PERFORATOR (*Bucculatrix thurberiella*) - ARIZONA - Some fields being treated in order to set top crop of bolls at Yuma, Yuma County. Heavy damage at Friendly Corners, Pinal County. Damaged leaves in Graham County. Major problem in many Maricopa County fields; averaged 100 per 100 sweeps in 40-acre field on west side. (Ariz. Coop. Sur.).

LYGUS BUGS (*Lygus* spp.) - NEW MEXICO - Moderate, apparently damaging squares and small bolls in Carlsbad, Eddy County. (Mathews).

SPIDER MITES - SOUTH CAROLINA - Problem in many areas. High populations and drought hastening maturity of fields where mites not controlled. (Sparks, Sept. 4). TENNESSEE - Maturing many fields over western area. (Locke).

SUGARBEETS

VARIEGATED CUTWORM (*Peridroma saucia*) - NEBRASKA - Third instar to full-grown larvae heavy, 1-5 per plant, on 85-90 percent of plants in Scotts Bluff County field; leaf feeding extensive. Most larvae will pupate in week or less. (Hagen et al.).

BEET ARMYWORM (*Spodoptera exigua*) - NEW MEXICO - Damage minor to foliage in 6 fields in Clovis area, Curry County. (Nielsen). COLORADO - This species, *Loxostege sticticalis* (beet webworm), and *Ceramica picta* (zebra caterpillar) found throughout Arkansas Valley. Much leaf damage in some fields in Prowers County. (Schweissing).

POTATOES, TOMATOES, PEPPERS

EUROPEAN CORN BORER (Ostrinia nubilalis) - VIRGINIA - Damage extensive, up to 85-90 percent, to pepper fruit in large commercial planting despite controls on Eastern Shore. (Hofmaster). DELAWARE - Flights continue high as indicated by blacklight trap collections in Sussex County. Larval infestations ranged 30-70 percent (very high) in untreated sweet peppers. (Burbutis). MICHIGAN - Moth activity declined past week but enough eggs laid to require controls on peppers. (Janes, Sept. 3).

POTATO TUBERWORM (Phthorimaea operculella) - VIRGINIA - Found in fall potatoes throughout Eastern Shore; extensive foliar damage expected soon. Increased greatly due to favorable weather and significant infestation from large acreage of unharvested spring potatoes. Hundreds of moths in fall planting at Painter station last week. Conditions will worsen unless weather changes quickly. Damage in irrigated potatoes less severe than in nonirrigated potatoes. (Hofmaster).

BET ARMYWORM (Spodoptera exigua) - VIRGINIA - Numerous on peppers in Accomack County. (Hofmaster). COLORADO - Up to 5 per 100 sweeps in several tomato fields in Arkansas Valley. (Schweissing).

TOMATO FRUITWORM (Heliothis zea) - MARYLAND - Light in tomatoes near Lexington Park, St. Marys County. (U. Md., Ent. Dept.).

CABBAGE LOOPER (Trichoplusia ni) - INDIANA - Larvae, mostly this species, heavily defoliated commercial tomato plantings at Tipton, Tipton County. (Lehker).

NOCTUID MOTHS - VIRGINIA - Collections of Agrotis ipsilon and Peridroma saucia increased abruptly on Eastern Shore during week; should reach peak shortly. (Hofmaster, Aug. 28).

A LEAF BEETLE (Lema sp.) - CALIFORNIA - Adults heavy on tomatillo plants at San Joaquin, Fresno County. More evident in 1968 than in past on solanaceous crops. (Cal. Coop. Rpt.).

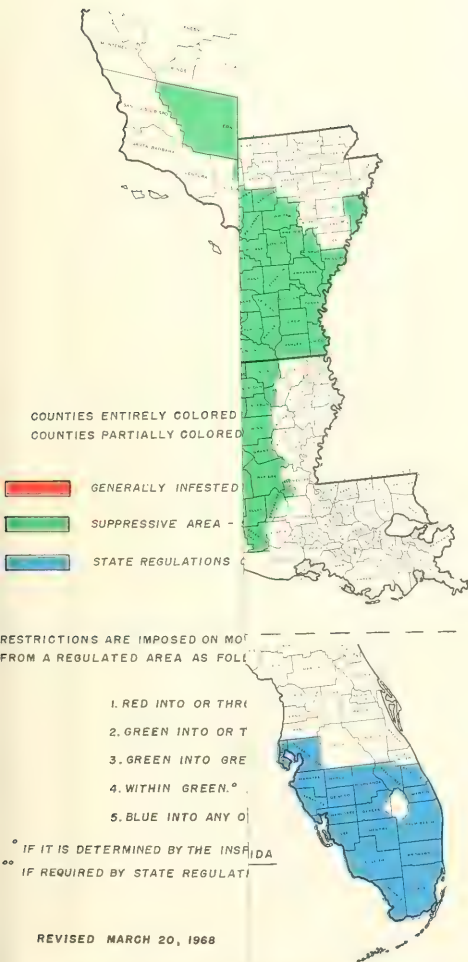
BEANS AND PEAS

MEXICAN BEAN BEETLE (Epilachna varivestis) - NEBRASKA - Heavy in 2 bean fields in Scotts Bluff and Morrill Counties. About 75 percent of larvae pupated; most remaining larvae full grown; adult emergence well underway. (Andersen, Keith). DELAWARE - Adults and larvae damaging pole lima beans. (Boys, Sept. 5).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - WISCONSIN - Adults continue numerous on beans in Dane, Rock, Columbia, and Waukesha Counties. (Wis. Ins. Sur.).

GREEN CLOVERWORM (Plathypena scabra) - DELAWARE - Larvae numerous in commercial snap and lima bean plantings. (Boys, Sept. 5). WISCONSIN - Larvae averaged about 3 per row foot on lima beans in Columbia County; feeding confined to leaves. (Wis. Ins. Sur.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - MARYLAND - Stand loss 5-10 percent in 6-acre bean planting near Vienna, Wicomico County. (U. Md., Ent. Dept.).



REVISED MARCH 20, 1968

... THE GENERALLY INFESTED AREA INTO THE suppressive area is exempt if the lint is from seed cotton produced in the suppressive area and moved to the generally infested area for ginning, provided the identity of the baled cotton lint is maintained.

Samples of cotton lint of the usual trade size are exempt. The samples may be assembled in a single package for shipment.

6. Cotton linters.

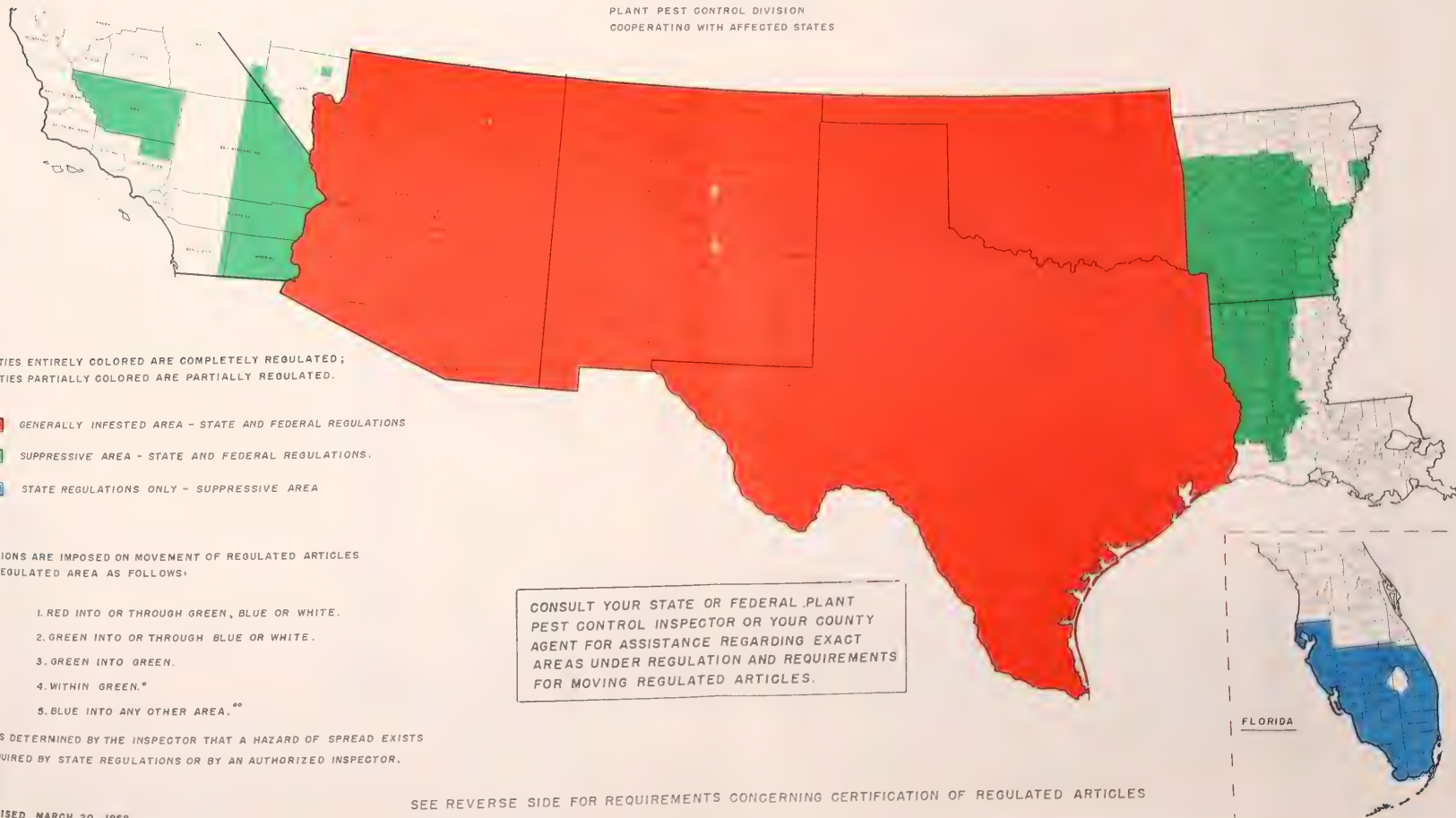
Linters are exempt if compressed to a minimum of 22 pounds per cubic foot.

Samples of cotton linters of the usual trade size are exempt. Samples may be assembled in a single package for shipment.

7. Cotton waste produced at cotton gins, cottonseed oil mills, and cotton textile

PINK BOLLWORM QUARANTINE

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
COOPERATING WITH AFFECTED STATES



SEE REVERSE SIDE FOR REQUIREMENTS CONCERNING CERTIFICATION OF REGULATED ARTICLES

mills.

Lint cleaner waste is exempt if compressed to a minimum of 22 pounds per cubic foot.

8. Cotton gin trash.
9. Used bagging and other used wrappers for cotton.
10. Used cotton harvesting equipment and used cotton ginning and cotton oil mill equipment.
11. Okra and kenaf, including all parts of such plants except canned or frozen okra.

Edible okra is exempt if produced during the period December 1 to May 15 inclusive, except that okra consigned to California is exempt only if produced during the period of January 1 to March 15 inclusive.

COLE CROPS

CABBAGE LOOPER (Trichoplusia ni) - VIRGINIA - Light trap moth collections continued very high on Eastern Shore as of August 28. Larval numbers so high in some areas that virus disease has spread despite unfavorable weather; severe virus infections localized. (Hofmaster). T. ni heavy in Floyd County cabbage; about 15 taken from 1 plant. (Allen, Aug. 30). NEW JERSEY - Eggs, larvae, and adults extremely abundant in all crucifer plantings; controls required every 3-4 days. (Ins.-Dis. Newsltr.). MICHIGAN - Rapid buildup past week at all blacklight stations: Lenawee County 19, Newaygo County 24, Manistee County 16. Continues problem on cole crops due to absence of control for early instars and lush foliage hampering good control application. (Janes, Newman, Sept. 3). WISCONSIN - Infestation one of highest in many years on cabbage in Columbia County due to ineffective controls. Larval counts of 10 per head not unusual. (Wis. Ins. Sur.).

CUCURBITS

BUMBLE FLOWER BEETLE (Euphoria inda) - IDAHO - Adults damaging watermelons at Orofino, Clearwater County. (Fitzsimmons, Aug. 30).

SQUASH BUG (Anasa tristis) - UTAH - Damaging squash plantings in St. George and Santa Clara area, Washington County. (Knowlton, Davis, Aug. 20).

HAWAII INSECT REPORT

Turf, Pasture - Adults of a BILLBUG (Sphenophorus venatus vestitus) light to moderate on lawn grasses at Aiea, Pearl City, and Waipahu on Oahu. (Melendez).

General Vegetables - All stages of BEAN FLY (Melanagromyza phaseoli) light on snap beans at Kahaluu, Oahu; damage confined to petioles on month-old planting. (Sato). All stages of LEAF MINER FLIES (Liriomyza spp.) medium to heavy on snap beans at Waianae and light to medium at Kahaluu, Oahu. (Sato, Yamamoto). All stages of CARMINE SPIDER MITE (Tetranychus cinnabarinus) heavy on watermelon and snap beans at Waianae, Oahu. Watermelon plants in last stage of harvest and spraying discontinued. (Yamamoto).

Fruits - All stages of BLACK PARLATORIA SCALE (Parlatoria zizyphus) heavily infested stems, leaves, and fruits of orange trees at Koko Head, Oahu. (Funasaki).

Ornamentals - SOUTHERN GREEN STINK BUG (Nezara viridula) nymphs lightly damaged young dendrobium orchid shoots and flower buds in small nursery at Palolo, Oahu. (Kawamura).

Miscellaneous - Adults of a BARK BEETLE (Xylosandrus compactus) heavy on Clidemia hirta (Kosters curse) in Forest Reserve in Palolo Valley, Oahu, at 500 feet elevation. Heavy infestations resulted in yellowed and necrotic leaves and dead and dying plants. Twelve adults noted in one brood chamber. This is a new host record for State. (Davis). Adults of a PLANT BUG (Cyrtopeltis modestus) heavy, averaged 17 per sweep (10 in April), on wild tomato at Ewa, Oahu. (Funasaki). Nymphs and adults of a RHOPALID BUG (Jadera haematoloma) remain heavy on balloon-vines in all lowland areas at Waianae, Oahu. No damage to crops. (Yamamoto).

THE FOLLOWING CROPS OR ARTICLES MUST BE MOVED UNDER CERTIFICATE OR
PERMIT YEAR-ROUND EXCEPT AS INDICATED:

1. Cotton and wild cotton, including all parts of such plants.

2. Seed cotton.

3. Cottonseed.

4. Cottonseed hulls.

5. Cotton lint.

Baled cotton lint is exempt if compressed to a minimum of 22 pounds per cubic foot.

Baled cotton lint moving from the generally infested area into the suppressive area is exempt if the lint is from seed cotton produced in the suppressive area and moved to the generally infested area for ginning, provided the identity of the baled cotton lint is maintained.

Samples of cotton lint of the usual trade size are exempt. The samples may be assembled in a single package for shipment.

6. Cotton linters.

Linters are exempt if compressed to a minimum of 22 pounds per cubic foot.

Samples of cotton linters of the usual trade size are exempt. Samples may be assembled in a single package for shipment.

7. Cotton waste produced at cotton gins, cottonseed oil mills, and cotton textile mills.

Lint cleaner waste is exempt if compressed to a minimum of 22 pounds per cubic foot.

8. Cotton gin trash.

9. Used bagging and other used wrappers for cotton.

10. Used cotton harvesting equipment and used cotton ginning and cotton oil mill equipment.

11. Okra and kenaf, including all parts of such plants except canned or frozen okra.

Edible okra is exempt if produced during the period December 1 to May 15 inclusive, except that okra consigned to California is exempt only if produced during the period of January 1 to March 15 inclusive.

GENERAL VEGETABLES

CABBAGE LOOPER (*Trichoplusia ni*) - MICHIGAN - Continues problem on celery and lettuce. No control of early instars and lush foliage hindering good application responsible for problem. (Janes, Newman, Sept. 3). COLORADO - Larvae increased; infested 4-36 (averaged 15.5) percent of lettuce in fields checked. (Schweissing).

NOCTUID MOTHS - MICHIGAN - *Agrotis ipsilon*, *Amathes c-nigrum*, and *Peridroma saucia* increased slowly but steadily last week at all blacklight stations: Lenawee County 97, Newaygo County 77, and Manistee County 47. *Feltia subgothica* decreased at all stations: Lenawee County 190, Newaygo County 143, and Manistee County 74. (Janes, Sept. 3). ALABAMA - *Heliothis* spp. larvae feeding on okra pods in Lee County gardens. (Barwood).

SWEETPOTATO LEAF ROLLER (*Pilocrocis tripunctata*) - ALABAMA - Larvae very heavy on foliage of all sweetpotatoes in West Fowl River area of southern Mobile County. (Seibels, Bolton).

HARLEQUIN BUG (*Murgantia histrionica*) - COLORADO - Adults 0-4 per lettuce plant at Longmont, Boulder County; no damage evident. (Johnson).

ONION THRIPS (*Thrips tabaci*) - COLORADO - Ranged 0-75 per onion plant throughout Arkansas Valley. (Schweissing).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (*Carpocapsa pomonella*) - OREGON - Third-generation flight peaked in Milton-Freewater area, Umatilla County, week of August 30. Up to 51 males in traps baited with females. Moths continually collected in blacklight traps. (Burkhart). CALIFORNIA - Larvae heavy in fruit of *Prunus subcordata* at Cedarville, Modoc County. (Cal. Coop. Rpt.). NEW MEXICO - Larvae infested 10-85 percent of apples in orchards checked at Ft. Sumner, De Baca County; lighter in properly treated orchards. (Nielsen). WISCONSIN - Caught 6 moths in blacklight trap at Madison August 28 to September 4. (Wis. Ins. Sur.). INDIANA - Record high of 374 males in 30 traps during period at Vincennes indicates third-generation adults present. (Wong, Sept. 3). RHODE ISLAND - Minor damage in sprayed apple orchard in Washington County. (Field).

ORIENTAL FRUIT MOTH (*Grapholitha molesta*) - INDIANA - Fourth flight of season continuing at Vincennes; 461 adults in bait jars during period. (Wong, Sept. 3).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - INDIANA - Caught 503 males compared with 243 previous week at Vincennes. (Wong, Sept. 3).

RED-HUMPED CATERPILLAR (*Schizura concinna*) - OREGON - Very abundant at Hermiston, Umatilla County; much heavier than in 1967. (Bierman). WEST VIRGINIA - Damaging plum trees in Wood County August 28. (Cole).

PEACH TWIG BORER (*Anarsia lineatella*) - CALIFORNIA - Larvae heavy in fruit of *Prunus subcordata* at Cedarville, Modoc County. (Cal. Coop. Rpt.).

AEGERIID MOTHS - OREGON - Several *Sanninoidea exitiosa* moths in blacklight trap at Milton-Freewater, Umatilla County. (Burkhart). INDIANA - *Synanthedon pictipes* male captures decreased slightly from 310 to 266 at Vincennes. (Wong, Sept. 3).

APPLE MAGGOT (*Rhagoletis pomonella*) - WISCONSIN - Adults continue active; highest count (47) August 27 to September 3 at Bayfield, Bayfield County. (Wis. Ins. Sur.). INDIANA - Caught 163 adults on stickyboards compared with 41 last week at Vincennes; second flight near peak. (Wong, Sept. 3). MAINE - Emergence virtually complete in emergence cages at Monmouth. Daily totals down to less than 1 percent of cumulative emergence to date. Adults still active in untreated orchards as shown by bait trap captures. (Boulanger, Sept. 4).

SAN JOSE SCALE (Aspidiotus perniciosus) - GEORGIA - Severe on Effingham County pears. (Clifton, Aug. 30).

APPLE SEED CHALCID (Torymus varians) - WISCONSIN - Larvae, apparently this species, numerous in crab apples at Madison location; infested at least one seed in almost every apple examined. (Wis. Ins. Sur.).

EUROPEAN RED MITE (Panonychus ulmi) - INDIANA - Light in several apple orchards at Vincennes. Continued to increase in research orchard from 25 per leaf previous week to 28. (Wong, Sept. 3). RHODE ISLAND - All stages present; as many as 180 eggs on one leaf from sprayed apple orchard in Washington County. (Field). MAINE - Generally declined in late August. Very heavy hatch of late summer eggs and abnormally high populations of young mites for period of season occurred week ending September 1. (Boulanger).

SPIDER MITES (Tetranychus spp.) - NEW MEXICO - Probably T. mcDanieli extremely heavy in many apple orchards checked at Ft. Sumner, De Baca County. Numerous on fruit, main branches, and weeds under trees. (Nielsen). INDIANA - Tetranychus spp. light in several apple orchards at Vincennes. (Wong, Sept. 3). MAINE - T. urticae increased to unprecedented levels during late August. Many orchards receiving continuous controls during preharvest period. (Boulanger, Sept. 4).

PECAN NUT CASEBEARER (Acrobasis caryae) - OKLAHOMA - Second-generation pupation 66 percent in Payne County. Light adult emergence begun; infested 5 percent of pecans checked. Heavy in pecans in Mayes County. (Okla. Coop. Sur.).

FALL WEBWORM (Hyphantria cunea) - OKLAHOMA - Probably second-generation third instars on pecan trees in Payne and Noble Counties; heavy on pecans in Mayes County. (Okla. Coop. Sur.). MISSISSIPPI - Foliar damage light to moderate on pecan trees in Oktibbeha County; several webs noted. (Dinkins).

WALNUT CATERPILLAR (Datana integerrima) - OKLAHOMA - Second-generation fourth instars on 5 percent of pecan trees checked in Payne County. Heavy in Mayes County. (Okla. Coop. Sur.). VIRGINIA - Collected in Wythe County. (Francis, Amos, Aug. 26).

PECAN WEEVIL (Curculio caryae) - OKLAHOMA - Adult emergence increasing in Payne County as rains continue. (Okla. Coop. Sur.).

SMALL FRUITS

GRAPE ROOT BORER (Vitacea polistiformis) - SOUTH CAROLINA - Severely damaged grape vineyard in Union County. This is fifth report of species in State. (Thomas, Sept. 4).

GRAPE SAWFLY (Erythraspides vitis) - TENNESSEE - Damaging grapes in Washington County. (Williams).

ORNAMENTALS

A SCARAB (Cyclocephala abrupta) - CALIFORNIA - Heavy on lantana and other garden plants at Ocotillo, Imperial County. (Cal. Coop. Rpt.).

A LEAFHOPPER (Erythroneura elegantula) - COLORADO - Heavy on unsprayed Virginia creeper at Grand Junction, Mesa County; foliar loss up to 25 percent. (Sisson).

BOXELDER BUG (Leptocoris trivittatus) - VIRGINIA - First specimens of year in Nottoway County. (Cassel, Amos, Aug. 26).

FOREST AND SHADE TREES

WESTERN PINE BEETLE (Dendroctonus brevicornis) - CALIFORNIA - Epidemic outbreaks in local areas of McCloud Flats area, Shasta National Forest, covered an estimated 144,000 acres. Approximately 7,200 acres involved in group outbreaks of pole size ponderosa pine in very dense stands. Salvage logging and thinning scheduled. Unusual situation in that low risk large trees being taken as well as smaller timber. (Cal. Coop. Rpt.).

CALIFORNIA FIVE-SPINED IPS (Ips confusus) - CALIFORNIA - Slash infestations decreasing in Consumnes district, El Dorado National Forest, probably due to summer temperatures drying slash fast enough to make material unsuitable for brood development. (Knigge, USFS).

CONIFER SAWFLIES (Neodiprion spp.) - WISCONSIN - N. pinetum moderate on several white pines near Marshfield, Wood County. (Wis. Ins. Sur.). ALABAMA - Developing N. lecontei larvae partially defoliated 3-acre stand of pines in Cleburne County. (Ventress). MAINE - N. lecontei stripping mugho pine shrubs around homes in area at Cumberland. (Boulanger, Sept. 4).

A PAMPHILIID SAWFLY (Acantholyda circumcincta) - FLORIDA - Larvae found defoliating 100 acres of sand pine (Pinus clausa) May 30, 1968, near Niceville, Okaloosa County. (Chellman). Reared specimens det. by D.R. Smith. This is a new State record. (Fla. Coop. Sur.).

A PHYCITID MOTH (Diorcetra abietella) - IDAHO - Riddled cones of Douglas-fir at Boise, Ada County; much webbing noted August 30. (McCracken).

ELM LEAF BEETLE (Pyrthaita luteola) - FLORIDA - Infested elm at Jacksonville, Duval County, August 16, 1968. This is a new State record. (Hetrick et al.). TEXAS - Infestations noted in Montague, Cooke, Wise, Denton, Collin, Rockwall, Tarrant, and Delta Counties. (Turney). OKLAHOMA - Damage continues moderate to heavy on Siberian elm in northwest area; heavy in Mayes and Cotton Counties. (Okla. Coop. Sur.). UTAH - Damage conspicuous in St. George area, Washington County, but lighter at Hurricane; damage worst ever at Logan, Cache County. (Davis, Knowlton, Aug. 20).

MIMOSA WEBWORM (Homadaula anisocentra) - VIRGINIA - Severe on many trees at Lynchburg and Fredericksburg. (Allen, Aug. 27). DELAWARE - New larvae abundant on mimosa and honeylocust throughout State. (Boys, Sept. 5).

VARIABLE OAK LEAF CATERPILLAR (Heterocampa manteo) - VIRGINIA - Larvae damaged oaks in Warwick County. (Tate, Allen, Aug. 21).

A GEOMETRID MOTH (Fulype hastata) - SOUTH DAKOTA - Larvae defoliated white birch in northern Black Hills. Main area of infestation extended from Sturgis, Meade County, to Spearfish, Lawrence County. Minimal injury to trees expected since defoliation occurred so late in season. (Jones, Metcalf).

FALL WEBWORM (Hyphantria cunea) - RHODE ISLAND - Many large webs noted in Newport and Washington Counties. (Field, Gould). VIRGINIA - Moderate on sourwood in Nansemond and Southampton Counties. (Allen).

MAN AND ANIMALS

MOSQUITOES - ALABAMA - Anopheles quadrimaculatus probably vector of 4 confirmed cases of malaria contracted from area between Auburn and Opelika in Lee County. These are first cases of malaria in State since 1960. Concentrated spraying begun in area. Mosquitoes heavy recently in Lee County. Larvae numerous in water-filled open containers. (Hagler et al.). WISCONSIN - Activity slowed for most part statewide; some biting in lowland area on warm days. (Wis. Ins. Sur.).

MINNESOTA - Recent rains produced small brood of Aedes vexans in Minneapolis and St. Paul area; cool nights slowed development so that controls will be able to prevent emergence. Light trap and biting collections predominantly A. vexans; Anopheles walkeri second most numerous in traps. Eggs in soil immersed in water showed 60 percent hatch indicating fall diapause well underway. Diapause essentially completed by September 15 in past years. (Minn. Ins. Rpt.). UTAH - Annoying in Logan and Benson area of Cache County August 20. More numerous again August 29 throughout west Millard County farm areas since recent rains. Very numerous and troublesome since late August rains on northern Tooele Valley farms and in northern Skull Valley, Tooele County. (Knowlton, Sept. 6).

SCREW-WORM (Cochliomyia hominivorax) - Total of 195 cases reported in U.S. September 1-9 as follows: Texas - Bee 6, Blanco 1, Brewster 11, Brooks 5, Cameron 1, Crockett 15, Culberson 1, De Witt 1, Duval 1, Edwards 1, Gillespie 1, Goliad 5, Gonzales 1, Hidalgo 3, Hudspeth 1, Jeff Davis 10, Jim Hogg 2, Jim Wells 1, Kenedy 5, Kimble 2, Kinney 1, Mason 5, Menard 1, Pecos 33, Presidio 6, Reeves 1, Refugio 3, San Patricio 2, Starr 1, Terrell 26, Val Verde 10, Victoria 1, Webb 1, Wilson 2; ARIZONA - Cochise 2, Greenlee 11, Maricopa 3, Pinal 1, Yavapai 1; NEW MEXICO - Eddy 1, Hidalgo 1, Grant 4; CALIFORNIA - Imperial 1, San Diego 3. Total of 610 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Baja California 1, Territorio sur de Baja California 30, Sonora 195, Chihuahua 93, Coahuila 223, Nuevo Leon 31, Tamaulipas 37. Total of 46 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 82,518,000; New Mexico 4,360,000; Arizona 9,280,000; California 700,000; Mexico 84,430,000. (Anim. Health Div.).

HORN FLY (Haematobia irritans) - UTAH - Numerous, annoying dairy and beef cattle throughout Dixie area, Washington County. (Knowlton, Aug. 20). COLORADO - Averaged over 100 per side on cattle in northeastern area. (Hantsbarger). TEXAS - Averaged 400 per head last week of August in Brazoria County. (Sanders). OKLAHOMA - Counts per head ranged 250-400 in Major and Woodward Counties, 200-300 in Payne County, and up to 1,000 in Noble County. Heavy in Cherokee, Muskogee, Mayes, Craig, Garvin, and Cotton Counties; moderate in Cleveland County. (Okla. Coop. Sur.). INDIANA - Up to 75 per head in west-central area. (Kutz). WEST VIRGINIA - Ranged 10-100 (average 34) per square foot on withers of adult cattle in State. (Dorsey). MARYLAND - Decreased sharply in Frederick County; none on cattle checked. (U. Md., Ent. Dept.).

FACE FLY (Musca autumnalis) - MARYLAND - Continued bothersome in central sections; ranged 3-24 per face on Holstein cattle in Frederick County. (U. Md., Ent. Dept.). INDIANA - Ranged 15-50 (average 20) per face on pastured cattle at Lafayette, Tippecanoe County. (Kutz). SOUTH DAKOTA - Up to 20 (average 15) per face on small herd of steers in northwestern Yankton County. (Jones).

STABLE FLY (Stomoxys calcitrans) - MARYLAND - Ranged 5-32 per head on Frederick County cattle. (U. Md., Ent. Dept.). OKLAHOMA - Averaged 2 per head on Payne County cattle. (Okla. Coop. Sur.).

COMMON CATTLE GRUB (Hypoderma lineatum) - ALABAMA - Egg laying on cattle completed in State. Systemic control efforts underway in several Madison County herds. (Halla).

A DEER FLY (Chrysops bishoppi) - NEVADA - Collected at Dyer, Esmeralda County, May 10, 1960, by R.C. Bechtel. Det. by C.B. Philip. This is a new State record. Collected in Washoe County for a new county record. (Bechtel).

A DEER FLY (Chrysops wileyae) - NEVADA - Collected 3 miles south of Caliente, Lincoln County, July 21, 1966, by G.D. Cooney. Det. by C.B. Philip. This is a new State record. (Bechtel).

A DEER FLY (*Silvius notatus*) - NEVADA - Collected at Fallon, Churchill County, July 28, 1960, by F.D. Parker. Det. by C.B. Philip. This is a new State record. Collected in Storey and Washoe Counties for new county records. (Bechtel).

TABANID FLIES - UTAH - Annoying cattle August 29 in lower Oak Creek Canyon, Millard County. Numerous, annoying horses September 6 at Erda and Lakepoint, Tooele County. (Knowlton). TEXAS - *Tabanus lineola* and *T. nigrovittatus* ranged almost 40 per head near Angleton, Brazoria County; about 90 percent *Tabanus* sp. (Sanders). OKLAHOMA - Ranged 10-20 per head on cattle and deer in Cherokee and Muskogee Counties. *T. americanus* most common; *T. atratus* also present. (Okla. Coop. Sur.).

A LOUSE FLY (*Lipoptena mazamae*) - OKLAHOMA - Averaged 2,500 per head on deer in Cherokee and Muskogee Counties. (Okla. Coop. Sur.).

BLACK FLIES (*Simulium* spp.) - COLORADO - Very annoying, feeding on horses at Platteville, Weld County. (Hantsbarger).

A MARCH FLY (*Bibio townesi*) - WEST VIRGINIA - Annoying residents in Pocahontas and Kanawha Counties August 6, 1968. Det. by A. Stone. This is a new State record. (W. Va. Ins. Sur.).

HOG LOUSE (*Haematopinus suis*) - OKLAHOMA - Light to occasionally heavy on hogs in Garvin County. (Okla. Coop. Sur.).

LONE STAR TICK (*Amblyomma americanum*) - OKLAHOMA - Larvae ranged 2,000-3,000 and nymphs averaged 100 per 25-yard drag in Cherokee and Muskogee Counties. (Okla. Coop. Sur.).

HOUSEHOLDS AND STRUCTURES

ASIATIC OAK WEEVIL (*Cyrtopistomus castaneus*) - WISCONSIN - Specimens collected in house near Lake Delton, Sauk County, in August. House adjacent to alfalfa field. Det. by R.E. Warner. This is a new State record. (Wis. Ins. Sur.).

BENEFICIAL INSECTS

LADY BEETLES - UTAH - Averaged 2 per 10 sweeps in alfalfa at Lakepoint, Tooele County. (Knowlton, Sept. 5). WYOMING - Adults averaged 8 per 100 sweeps on alfalfa in Converse, Johnson, Crook, and Weston Counties. (Parshall).

A GREEN LACEWING (*Chrysopa* sp.) - UTAH - Adults averaged 1 per 10 sweeps in alfalfa at Lakepoint, Tooele County. (Knowlton, Sept. 5).

DAMSEL BUGS (*Nabis* spp.) - WYOMING - Adults and nymphs averaged 13 per 100 sweeps on alfalfa in Converse, Johnson, Crook, and Weston Counties. (Parshall). UTAH - *N. alternatus* averaged 3 per 10 sweeps in alfalfa at Lakepoint, Tooele County. (Knowlton, Sept. 5).

A FLOWER BUG (*Orius tristicolor*) - UTAH - Sometimes extremely numerous; nymphs up to 35 per 10 sweeps August 29 where thrips extremely numerous in alfalfa seed fields in Sutherland and Delta area, Millard County. Averaged 4 per 10 sweeps September 5 at Lakepoint, Tooele County, in alfalfa. (Knowlton).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

GRASSHOPPERS - OKLAHOMA - Adults economic, 8+ per square yard on about 687,000 acres of rangeland in 20 western, southwestern, and northwestern counties. Ageneotettix deorum, Phliostroma quadrimaculatum, Aulocara elliotti, Drepanopterna femoratum, Metator pardalinus, Cordillacris crenulata, and Melanoplus lakinus predominant. (Okla. Coop. Sur.). NEBRASKA - Melanoplus spp. noneconomic in 19 cornfields in Deuel, Cheyenne, Kimball, Banner, Sioux, Box Butte, and Dawes Counties. (Andersen, Keith). MINNESOTA - Less numerous than in 1967 as indicated by recently completed annual fall survey. (Minn. Ins. Rpt.). WISCONSIN - Melanoplus femurrubrum maturation about 95 percent in sandy sections of southern area; only about 10 percent of females with eggs. Feeding damage more evident on cornfield margins in some areas. Averaged 15 per square yard along cornfield margins in Waupaca and Shawano Counties. (Wis. Ins. Sur.).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - Kern County - Four additional sterile moths taken in traps in Edison drop zone; sterile moth releases averaging about 250,000 per week; all surveys for field infestations remain negative in San Joaquin Valley. Imperial County - Infestation about 15 percent in this area; decreased to about 6.5 percent in Bard area. Riverside County - Infestations slowly increased to 19 percent in Palo Verde and Coachella Valleys. San Diego County - Infestation about 15 percent in 5-acre field at Borrego; sterile moths will be dropped twice a week in this area; releases began August 29. (Cal. Coop. Rpt.). NEVADA - Collected 7 males August 26 and 5 males August 30 in sex lure traps in cotton and one male in sex lure trap in hollyhock in Moapa Valley, Clark County; nearest cotton to hollyhock 4 miles to southeast. (Yamashita). ARIZONA - Flights heavy along Colorado River in Yuma County. (Ariz. Coop. Sur.). NEW MEXICO - Boll infestations up to 8 percent in 5 fields in southern Dona Ana County. (Campbell).

RANGE CATERPILLAR (Hemileuca oliviae) - NEW MEXICO - Initial estimate of 20 sections of rangeland infested in northern Lincoln County; area being checked to determine extent and degree of infestation. (Dunlap).

SOYBEAN CYST NEMATODE (Heterodera glycines) - MISSISSIPPI - Collected in Quitman County June 4 and Panola County July 3 for new county records. Det. by A.M. Golden. (PPC).

INSECT DETECTION

New State Records

A PAMPHILIID SAWFLY (Acantholyda circumcincta) - FLORIDA - Larvae on Pinus clausa May 30, 1968, near Niceville, Okaloosa County. Det. by D.R. Smith. (p. 886).

ELM LEAF BEETLE (Pyrrhalta luteola) - FLORIDA - On elm at Jacksonville, Duval County, August 16, 1968. (p. 886).

A DEER FLY (Chrysops bishoppi) - NEVADA - Collected at Dyer, Esmeralda County, May 10, 1960, by R.C. Bechtel. Det. by C.B. Philip. (p. 887).

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A MARCH FLY (Bibio townesi) - WEST VIRGINIA - Annoying residents in Pocahontas and Kanawha Counties August 6, 1968. Det. by A. Stone. (p. 888).

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) - WISCONSIN - Collected near Lake Delton, Sauk County, in August. Det. by R.E. Warner. (p. 888).

New County Records

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - NEBRASKA - Seward, Deuel, Cheyenne, Kimball, Banner, Sioux, and Dawes Counties. (p. 877).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - MISSOURI - Dent and Carter Counties. (p. 877).

A DEER FLY (Chrysops bishoppi) - NEVADA - Washoe County. (p. 887).

A DEER FLY (Silvius notatus) - NEVADA - Storey and Washoe Counties. (p. 888).

SOYBEAN CYST NEMATODE (Heterodera glycines) - MISSISSIPPI - Quitman and Panola Counties. (p. 889).

CORRECTIONS

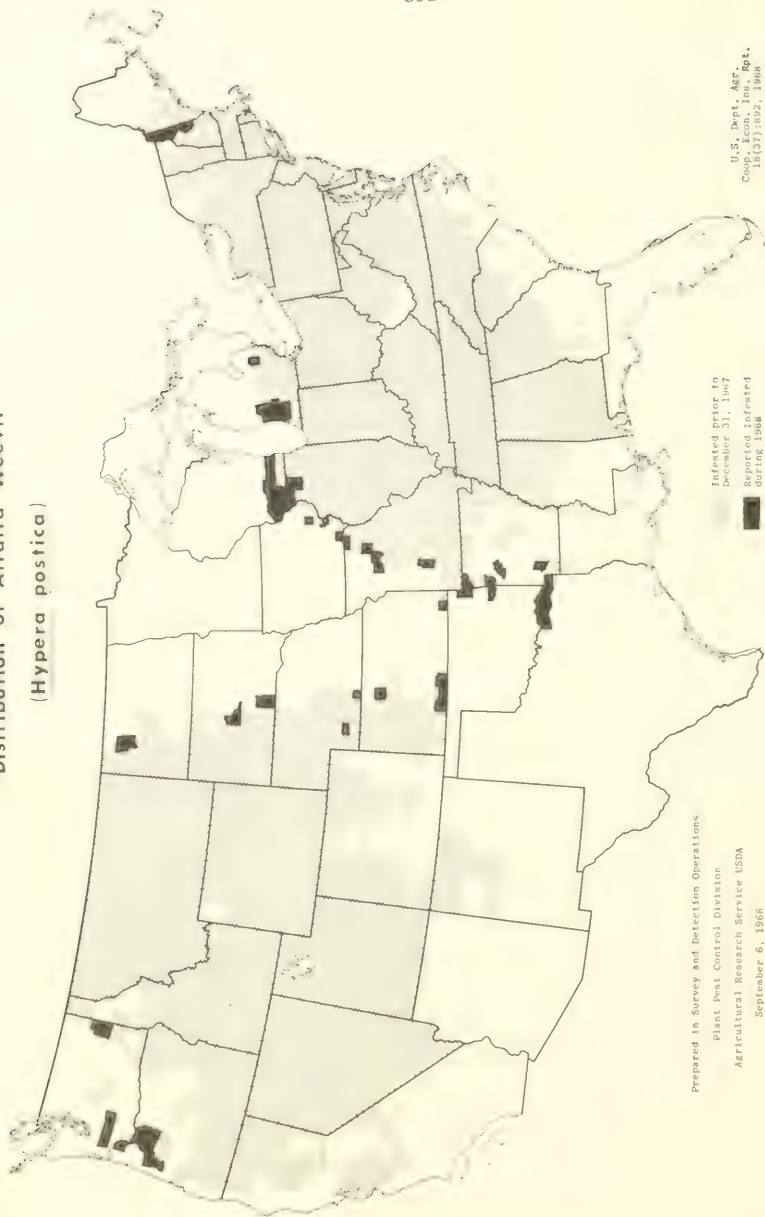
CEIR 18(33):793 - TEPHRITID FLIES (Rhagoletis spp.) - ... CALIFORNIA - R. indifferens should be R. cingulata indifferens....

CEIR 18(35):850,851 - WHITE-FRINGED BEETLES (Graphognathus spp.) - ... MISSISSIPPI - G. peregrinus in Lowndes County but G. leucoloma fecundus in Clay County.

LIGHT TRAP COLLECTIONS

- 891 -

Distribution of Alfalfa Weevil (*Hypera postica*)



Prepared in Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service USDA
September 6, 1968

Infested prior to
December 31, 1967
Reported Infested
during 1968

U.S. Dept. Agr.
Coop. Econ. Inv. Rpt.
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VOL. 18 No. 38

September 20, 1968

Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

All reports and inquiries pertaining to this release, including the mailing list, should be sent to:

Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

CORN EARWORM heavy in field corn in southwest Indiana and in soybeans throughout Georgia. (p. 895).

Second-generation EUROPEAN CORN BORER heaviest in corn in many years in Indiana. SORGHUM WEBWORM heavy on sorghum in Love and Nowata Counties, Oklahoma; damaging sorghum in north-central and eastern Texas. (p. 896).

GREEN CLOVERWORM and ALFALFA CATERPILLAR continue heavy on alfalfa throughout Wisconsin. (p. 897).

GREEN CLOVERWORM severely defoliated soybeans in southeastern Kansas. MEXICAN BEAN BEETLE heavily damaged several hundred acres of soybeans in Wicomico and Somerset Counties, Maryland. (p. 899).

BOLL WEEVIL square and boll damage heavy in north-central Texas. BOLLWORM damage heavy in Wichita and Childress Counties of same State. (p. 899).

CABBAGE LOOPER still troublesome on crucifers throughout New Jersey; difficult to control on cabbage in Wisconsin. (p. 900).

CODLING MOTH larvae heavy in apples in Yolo County, California. (p. 901).

PALMERWORM defoliation heavy on forest and shade trees in areas of Ohio. (p. 904).

HORN FLY heavy on cattle in Palm Beach County, Florida, and in Sully and Potter Counties, South Dakota. (p. 906).

Detection

New State records include a JAPANESE WEEVIL in Indiana (p. 904), BOXELDER PSYLLID in Maryland (p. 905), and a NOCTUID MOTH in Delaware (p. 908).

For new county, parish, and island records see page 908.

Special Reports

Survey Methods. Selected References 1957. Part X (pp. 911-914).

Japanese Beetle Quarantine Map. Centerfold.

Reports in this issue are for week ending September 13 unless otherwise indicated.

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WEATHER BUREAU'S 30-DAY OUTLOOK

MID-SEPTEMBER TO MID-OCTOBER 1968

The Weather Bureau's 30-day outlook calls for temperatures to average below seasonal normals over most of the area lying between the Appalachians and the Rockies except for near to above normal along the northern border States. Above normal temperatures are expected in the Pacific Coast States. Except for below normal temperatures over eastern New England near normal averages are expected to prevail elsewhere. Precipitation is predicted to exceed normal over most of the central portion of the Nation lying between the Rockies and the Appalachians and also along immediate coastal regions from Matheras to southern New England. Subnormal amounts are indicated over the Far Southwest and part of the extreme Southeast. In other areas near normal rainfall is indicated.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$5.00 a year.

WEATHER OF THE WEEK ENDING SEPTEMBER 16

HIGHLIGHTS: Fair, sunny weather in West most of week and in eastern part latter half. Little rain west of Great Plains. Heavy precipitation in most areas of Gulf States and East.

PRECIPITATION: During the first three days of the week a frontal system, moving eastward from the Mississippi Valley, produced moderate to heavy rainfall, rather generally from lower Mississippi Valley and upper Ohio Valley to the Atlantic coast. Unusually heavy amounts were reported from northern Virginia into southeastern Pennsylvania with up to six inches measured in the Baltimore, Maryland, and Washington, D.C., areas. Little or no rain fell in eastern Alabama, however, and only very light amounts in the Florida Panhandle where moderate drought continues. A weakening tropical storm from the Pacific brought rain into the western gulf region during the weekend. A cold front in northwestern Washington early in the week reached the Great Plains by the end of the period. Rainfall along the front was mostly light and scattered. Weekly totals in the western Great Lakes and upper Mississippi Valley, the central and upper Great Plains, and Far West ranged mostly from none to a few hundredths, with amounts over an inch limited mainly to eastern portions of South Dakota and Nebraska and the north Pacific coast. Weather continued on page 909.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

GREENBUG (*Schizaphis graminum* (In broad sense))* - ARIZONA - Remains heavy in untreated sorghum field at Bowie, Cochise County. Heavy buildup in early August caused severe damage during remainder of month in many sorghum fields in county. This aphid rare in State; such heavy numbers even rarer. (Ariz. Coop. Sur.). COLORADO - Very light on sorghum in northeastern area. Negative in fields checked. (Johnson). KANSAS - None found in sorghum examined in Haskell, Seward, Stevens, Grant, and Kearney Counties or on wheat in Thomas, Scott, Haskell, Stevens, Grant, and Kearney Counties. (Simpson).

ARMYWORM (*Pseudaletia unipuncta*) - NORTH DAKOTA - Third instars evident in swathed grain in Golden Valley County; may be problem in this area in 1969. (McBride).

CORN EARWORM (*Heliothis zea*) - MARYLAND - Moths averaged 2 per night in blacklight collections at Centreville, Queen Annes County. Early instars averaged 1 per row foot in soybeans on lower Eastern Shore. (U. Md., Ent. Dept.). VIRGINIA - Larvae averaged 1-2 per row foot in many soybean fields; no severe damage detected. (Allen, Ptucha). INDIANA - Early to middle instars heavy, 1-4 per ear, on 60-100 percent of late field corn in southwest district. Infestations spotty throughout rest of State; up to 50 percent in occasional central area field. (Huber). Early instars infested 58 percent of field of late sweet corn in Tippecanoe County. (Gould). MICHIGAN - Moth collections increasing, particularly in Lenawee County blacklight station where weekly total 23. First 2 moths of season in Montcalm County September 1. Larvae still problem on silking sweet corn. (Newman, Janes). WISCONSIN - *H. zea* and *Ostrinia nubilalis* causing many problems for some canning companies. *H. zea* infested 1 out of 10 ears in Bayfield County. Problems expected next few weeks as larvae enter ears. (Wis. Ins. Sur.). GEORGIA - Heavy in many soybean fields over State. (Jordan). ALABAMA - Larvae much more of threat to soybeans last 10-15 days. Numerous enough for control in Autauga, Covington, Macon, Elmore, Dallas, Lauderdale, Bibb, Talladega, and Madison Counties. Heaviest in Dallas, Autauga, Elmore, and Macon Counties. Negative in some soybeans in each county. (Scott et al.). MISSISSIPPI - Larvae averaged over one per 3 row feet on 5 Quitman County soybean farms; pod damage moderate. Averaged 1 per 2 row feet on 50 acres of soybeans in Yazoo County; pod damage moderate, treatment applied. (Dinkins). TEXAS - Light to medium on late-planted grain sorghum near Pittsburg, Camp County. (Cates, Green). OKLAHOMA - Counts ranged 1-5 per head in sorghum in Ellis County; light in sorghum in Garvin County. (Okla. Coop. Sur.). KANSAS - Averaged 2-4 per head on sorghum in Neosho County. Infestations almost 100 percent in corn examined in Haskell, Stevens, and Grant Counties. Heavier in most areas in 1968 than in past 2 years. (Simpson).

CORN LEAF APHID (*Rhopalosiphum maidis*) - KANSAS - Light in corn and sorghum in Haskell, Seward, Stevens, Grant, and Kearney Counties. Averaged less than 25 per plant on 10 percent of sorghum plants. (Simpson). ALABAMA - Maize dwarf mosaic and/or corn stunt virus much worse in corn in Cleburne County than in any past year. (Ventress).

PICKLEWORM (*Diaphania nitidalis*) - GEORGIA - Severe on Spalding County summer squash. (Dupree).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - WISCONSIN - Apparently increasing in alfalfa, but somewhat more slowly than pea aphid in southern third of State. (Wis. Ins. Sur.). IOWA - Negative in alfalfa checked in southwest area. (Iowa Ins. Sur., Sept. 6). SOUTH DAKOTA - Less than 5 per 100 sweeps on alfalfa south of Webster, Day County; near Revillo, Grant County; and west of Wilmot, Roberts County. These are new county records. (Jones). NEBRASKA - Ranged 0-18 (average 8.3) per 100 sweeps in established Dawson County alfalfa stands. Ranged 0-25

* According to recent taxonomic studies by L.M. Russell. This aphid on sorghum appears to be this species.

(average less than 1) per 100 leaves on 6 to 8-inch high alfalfa seedlings. Threat of damage past. (Manglitz). WYOMING - Ranged 0-150 (average 20) per 100 sweeps in alfalfa in Goshen, Platte, and Laramie Counties. (Parshall). ARIZONA - Averaged 30 per 100 sweeps in alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.). OREGON - Found in several alfalfa fields in Hermiston and Stanfield areas, Umatilla County. Mostly alates averaged 1-5 per sweep in field at Hermiston. Negative in fields in surrounding counties. (Westcott).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NORTH DAKOTA - Plant infestations ranged 12-60 (average 31) percent in corn in Barnes County; larvae 12-336 (average 122) per 100 plants. Some second-brood larvae evident in county. (Kaatz). INDIANA - Second generation heaviest in corn in many years. Infestations ranged 40-100 percent in milk to early dent-stage corn in west-central, central, southwest, and south-central districts. Mostly fifth instars ranged 1-9 per plant; heaviest in southwest district. Stalk breakage averaged 30 percent in most heavily infested fields. (Huber). MICHIGAN - Limited moth emergence past week at Lenawee, Newaygo, and Montcalm County blacklight stations. Highest collection (77) at Montcalm County trap September 1. Continued emergence at Lenawee County station trap past week. Collected 70 moths (60 males) August 31. Sporadic emergence August 29 to September 5, excluding September 1. Ranged from 2 August 29 to 36 September 3. Ranged 0-16 at Newaygo County blacklight station for same period. (Newman). MARYLAND - Moths averaged 11+ per night in blacklight collections at Centreville, Queen Annes County. (U. Md., Ent. Dept.).

SORGHUM WEBWORM (*Celama sorghiella*) - OKLAHOMA - Ranged up to 100 per head in grain sorghum in Marshall County; averaged 10 per head in Tillman County. Heavy in Love and Nowata Counties; moderate in Mayes and Ottawa Counties; light in Garvin County. (Okla. Coop. Sur.). TEXAS - Damaging late-planted grain sorghum in north-central and eastern areas. (Turney, Cates).

FALL ARMYWORM (*Spodoptera frugiperda*) - OKLAHOMA - Heavy on sorghum terminals in Noble County. (Okla. Coop. Sur.).

WESTERN BEAN CUTWORM (*Loxagrotis albicosta*) - COLORADO - Larvae heavy on most corn plants in Yuma area, Yuma County. (Pilcher).

GRASSWORMS (*Mocis* spp.) - FLORIDA - Almost destroyed 400 acres of sorghum on ranch at Belle Glade, Palm Beach County; additional 200 acres infested. Treatment recommended. Det. and collected by W.G. Genung. (Genung).

CORN ROOTWORMS (*Diabrotica* spp.) - ILLINOIS - *D. virgifera* collected in corn in Putnam, Marshall, Kendall, Kane, Boone, McHenry, Tazewell, Schuyler, Cass, and Pike Counties for new county records. (Ill. Ins. Rpt.). SOUTH DAKOTA - *Diabrotica* spp. very light in corn in north-central area. *D. virgifera* adults less than one per 100 stalks in cornfield east of Mound City, Campbell County. This is a new county record. (Jones). KANSAS - *D. longicornis* adults collected on corn in August in Jewell and Republic Counties for new county records. (Wilke). WASHINGTON - *D. undecimpunctata* undecimpunctata larvae infested corn seedling roots in Clark County. (Retan, Wesseler, Sept. 6).

CORN SAP BEETLE (*Carpophilus dimidiatus*) - TEXAS - Heavy in late-planted corn near Pittsburg, Camp County. (Cates, Green).

A WEEVIL (*Anacetrinus deplanatus*) - TEXAS - Heavy on sorghum at Whitewright; lodging begun in grain sorghum. (Turney).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Averaged 100 per 100 sweeps in sorghum at Casa Grande, Pinal County. (Ariz. Coop. Sur.).

FALSE CHINCH BUG (*Nysius ericae*) - NEW MEXICO - Damaged grain sorghum heads on field margins at Lovington, Lea County. (Mathews).

SAY STINK BUG (*Pitedia sayi*) - ARIZONA - Still light in sorghum in Graham and Cochise Counties. (Ariz. Coop. Sur.).

SORGHUM MIDGE (*Contarinia sorghicola*) - ARIZONA - Scattered infestations appearing in sorghum heads in Cochise County. (Ariz. Coop. Sur.).

SMALL GRAINS

RICE STINK BUG (*Oebalus pugnax*) - MISSOURI - Mostly adults averaged 27 per 10 sweeps in rice in Butler County. (Hanning, Huggans).

TURF, PASTURES, RANGELAND

GRASSWORMS (*Mocis* spp.) - FLORIDA - Heavy on 300 acres of Para grass on ranch near Belle Glade, Palm Beach County. Det. and collected by W.G. Genung. (Genung).

A MARCH FLY (*Dilophus orbatus*) - CALIFORNIA - Adults heavy on lawns in San Bruno and Millbrae, San Mateo County, and San Leandro, Alameda County. This species unusually prevalent last 2-3 years. (Cal. Coop. Rpt.).

A DARKLING BEETLE (*Pelecyphorus densicollis*) - WASHINGTON - Extremely heavy on rangeland for about 5 miles along State Highway 12 near Pasco, Benton County. (Thomas, Nonini).

BLACK BLISTER BEETLE (*Epicauta pennsylvanica*) - UTAH - Numerous on rabbitbrush blossoms in some Tooele County areas. (Knowlton, Sept. 13).

YELLOW SUGARCANE APHID (*Sipha flava*) - FLORIDA - Averaged about 20 per 10 leaf blades on several experimental bristlegrasses at laboratory in Indian River, St. Lucie County; much lighter on Rhodes grass and other grasses in same area. Det. and collected by W.G. Genung. (Genung).

A GROUND PEARL (*Margarodes meridionalis*) - ARIZONA - Heavy in Tifgreen Bermuda grass of golf courses at Phoenix and Scottsdale, Maricopa County; all stages present. (Ariz. Coop. Sur.).

FORAGE LEGUMES

GREEN CLOVERWORM (*Plathypena scabra*) - INDIANA - Larvae ranged 6-15 per sweep on alfalfa in southwest district; up to 10 percent of terminals stripped; 25 percent of larvae collected parasitized. (Huber). MICHIGAN - Collections (85 moths) at Lenawee County blacklight station still higher than all other stations combined; 34 moths collected August 31. Collections at Montcalm County station past week totaled 11. (Newman). WISCONSIN - This species and *Colias eurytheme* (alfalfa caterpillar) continue heavy on alfalfa statewide; averaged about 3 per sweep. Virus killing many larvae but moths still numerous; infestation expected to continue. (Wis. Ins. Sur.). MISSOURI - All instars averaged 170 per 10 sweeps in alfalfa in east-central area. (Hanning, Huggans). IOWA - Occasional last instar collected from alfalfa and clover in south-central and southwest areas. (Iowa Ins. Sur., Sept. 6).

CABBAGE LOOPER (*Trichoplusia ni*) - ARIZONA - Averaged 100 per 100 sweeps in alfalfa at Casa Grande, Pinal County. (Ariz. Coop. Sur.).

ALFALFA CATERPILLAR (*Colias eurytheme*) - WYOMING - Larvae ranged 0-9 (average 4) per 100 sweeps in alfalfa in Platte, Goshen, and Laramie Counties. (Parshall). NEW MEXICO - Generally light in alfalfa in Dona Ana County; increasing in

isolated fields. (Campbell). VIRGINIA - Larvae 5 per 100 sweeps on Augusta County alfalfa. (Hendrick).

ALFALFA WEEVIL (*Hypera postica*) - VIRGINIA - Larvae 5 per 100 sweeps in alfalfa in Augusta County; 30 percent of larvae parasitized by *Tetrastichus incertus* (a eulophid wasp). (Hendrick). INDIANA - Larvae ranged 1-3 per 5 sweeps and mating adults averaged 1 pair per 5 sweeps on alfalfa in southeast district. This district had heaviest early season populations in State. (Huber). MICHIGAN - Ranged 8-17 per 200 sweeps in Lenawee and Monroe County alfalfa. Larvae per 200 sweeps ranged from 26 in third-cutting to 81 in second-cutting regrowth in same fields. (Newman, Sept. 9). NEBRASKA - Negative in 11 Dawson County alfalfa fields; one larva and 4 adults taken in 200 sweeps in alfalfa field near Gothenburg. (Manglitz). WYOMING - Adults per 10 sweeps averaged 20 in first-growth alfalfa field and 1 in 2 second-growth fields near Farson, Sweetwater County. (Spackman). Adults per 100 sweeps averaged 12 in third-growth alfalfa in Platte County and 2 in Goshen and Laramie Counties. Few larvae still present. (Parshall). OREGON - Adults 2 per 50 sweeps in alfalfa field near Vale, Malheur County. (Westcott).

CLOVER ROOT CURCULIO (*Sitona hispidulus*) - MICHIGAN - High in all Monroe and Lenawee County clover fields; ranged 178-243 per 200 sweeps in 5 fields. (Newman, Sept. 9).

SOUTHERN CORN ROOTWORM (*Diabrotica undecimpunctata howardi*) - WYOMING - Adults averaged 5 per 100 sweeps in 7 alfalfa fields in Goshen and Laramie Counties. (Parshall).

BLACK BLISTER BEETLE (*Epicauta pennsylvanica*) - IOWA - Averaged 1+ per sweep on alfalfa and red clover in south-central and southwest areas. (Iowa Ins. Sur., Sept. 6).

PEA APHID (*Acyrtosiphon pisum*) - OREGON - Severe outbreak in alfalfa field near Hermiston, Umatilla County, during August completely controlled by parasites in 2 weeks. (Bierman). WYOMING - Nymphs and adults ranged 150-18,000 per 100 sweeps in third-growth alfalfa in Platte, Goshen, and Laramie Counties; heaviest count in stunted and yellowed alfalfa field in Platte County. (Parshall). COLORADO - Light in third-cutting alfalfa in northeastern and southwestern areas. (Johnson, Bulla). NEW MEXICO - Generally light on Dona Ana County alfalfa. (Campbell). NEBRASKA - Ranged 0-212 (average 61) per 100 sweeps on Dawson County alfalfa. (Manglitz). IOWA - Very low, averaged less than 5 per sweep on alfalfa and red clover in south-central and southwest areas. (Iowa Ins. Sur., Sept. 6). WISCONSIN - General increase in all alfalfa surveyed across southern third of State; ranged 10-30 per sweep depending upon stage and vigor of alfalfa. (Wis. Ins. Sur.).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - OKLAHOMA - Continues problem in alfalfa in Milburn area, Johnston County. Averaged 7 per 10 sweeps in alfalfa in Cotton County. (Okla. Coop. Sur.). ARIZONA - Average per 100 sweeps in alfalfa by county: Cochise, 125 at San Simon; Yuma, 80 at Yuma. (Ariz. Coop. Sur.).

LYGUS BUGS (*Lygus* spp.) - OREGON - Mostly early instars averaged 28 per sweep in alfalfa field 10 miles east of Vale, Malheur County. Plants 3 feet high in early bloom. Similar numbers in field at Mt. Vernon, Grant County. (Westcott). ARIZONA - Average per 100 sweeps in alfalfa by county: Pinal, 150 at Casa Grande; Yuma, 77 at Yuma. (Ariz. Coop. Sur.). WYOMING - Averaged 25 per 100 sweeps in alfalfa in Platte, Goshen, and Laramie Counties. (Parshall).

ALFALFA PLANT BUG (*Adelphocoris lineolatus*) - WYOMING - Adults and nymphs ranged 5-80 (average 22) per 100 sweeps in alfalfa in Platte, Goshen, and Laramie Counties. (Parshall).

A FLEAHOPPER (*Spanogonicus albofasciatus*) - ARIZONA - Averaged 15 per 100 sweeps in alfalfa at San Simon, Cochise County. (Ariz. Coop. Sur.).

SOYBEANS

GREEN CLOVERWORM (Plathypena scabra) - NEBRASKA - Defoliation heavy in one field near Geneva, Fillmore County. (Keith). KANSAS - Damage continues in southeastern area. Defoliation quite severe in many cases. (Simpson). OKLAHOMA - This species and Trichoplusia ni (cabbage looper) damaging soybeans in Noble County; defoliation averaged 50+ percent. (Okla. Coop. Sur.). ALABAMA - Numbers and feeding light on leaves in Talladega, Madison, and other counties. (Bass et al.). VIRGINIA - Light in Westmoreland and Richmond Counties. Many appeared diseased. (Allen, Ptucha).

A NOCTUID MOTH (Pseudoplusia includens) - FLORIDA - Widespread but noneconomic at Sanford, Seminole County. Det. and collected by G.L. Greene. (Greene).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ALABAMA - Damaging stems in isolated spots of some Madison County fields. (Magnusson, Bond).

MEXICAN BEAN BEETLE (Epilachna varivestis) - VIRGINIA - Damage severe in 30-acre field in Richmond County. Damage in Northern Neck area spotty and generally not severe except in few locations. (Allen). Defoliation not too severe as of September 11. Controls should have been applied to one or 2 fields earlier in season in Essex County. (Compton). MARYLAND - Damage heavy on several hundred acres in Allen and Eden area of Wicomico and Somerset Counties. Adults ranged up to 50 per row foot. (U. Md., Ent. Dept.).

GRASSHOPPERS - INDIANA - Melanoplus femurrubrum and M. differentialis defoliation up to 15 percent in some weedy fields in west-central and central districts. Adults ranged 0-2 per 3 row feet in fields and 3-9 per square yard on roadsides. M. femurrubrum 80 percent and M. differentialis 20 percent of population. Very light in southern third of State. (Huber).

SOUTHERN GREEN STINK BUG (Nezara viridula) - VIRGINIA - Averaged 100 per 100 row feet in 5-acre field in Westmoreland County. (Allen, Ptucha).

LYGUS BUGS (Lygus spp.) - ARIZONA - Averaged 24 per 100 sweeps in Kansas Settlement area of Cochise County. (Ariz. Coop. Sur.).

COTTON

BOLL WEEVIL (Anthonomus grandis) - SOUTH CAROLINA - Relatively light compared with bollworms at Florence. (Taft et al., Sept. 6). MISSISSIPPI - Activity light throughout most of delta area. Fresh punctures noted in 2 of 30 fields in Leflore, Tallahatchie, Quitman, and Coahoma Counties and in 7 of 15 fields in Yazoo County. (Dinkins). OKLAHOMA - Percent punctured squares averaged 11 in Tillman County and 15 in Payne County. Moderate in Garvin County and light in Marshall County. (Okla. Coop. Sur.). TEXAS - Square and boll damage heavy in Wilbarger, Hardeman, Childress, Knox, and Fisher Counties. (Boring).

BOLLWORMS (Heliothis spp.) - SOUTH CAROLINA - Caught 1,442 H. zea and 33 H. virescens in light trap during period at Florence; H. zea 13,761 and H. virescens 423 for year. (Taft et al., Sept. 6). MISSISSIPPI - H. zea and H. virescens infestations general in Yazoo County. Third or later instars in all 15 fields surveyed. Egg infestation not more than 2 percent in any field. Activity general with mostly third or later instars in late cotton in Quitman, Tallahatchie, Leflore, and Coahoma Counties. Eggs per 100 terminals ranged 0-30 in late cotton and less than 5 in older cotton. (Dinkins). OKLAHOMA - Percent H. zea fruit damage ranged 6-20 in Garvin County, 10-30 in Marshall County, and averaged 15 in Payne County. Averaged 3 per 100 terminals in Tillman County. (Okla. Coop. Sur.). TEXAS - H. zea damage heavy in Wichita and Childress Counties and medium in Knox, Collingsworth, and Wilbarger Counties. (Boring).

CABBAGE LOOPER (Trichoplusia ni) - SOUTH CAROLINA - Caught 17 moths in light trap during period at Florence; total to date 4,625. (Taft et al., Sept. 6). TEXAS - Damaging cotton in Jones County. (Boring). ARIZONA - Larvae averaged 1 per 10 plants in Cochise, Graham, and Maricopa Counties. (Ariz. Coop. Sur.).

COTTON LEAF PERFORATOR (Bucculatrix thurberiella) - ARIZONA - Controls continue in Maricopa and Yuma Counties. Infested all fields west of Thatcher, Graham County. (Ariz. Coop. Sur.).

COTTON APHID (Aphis gossypii) - NEW MEXICO - Infestation in southern Dona Ana County could create problem if it continues to develop. Some honeydew on leaves. (Campbell). ARIZONA - Averaged 8 per plant in Stewart District, Cochise County. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - ARIZONA - Averaged 30 per 100 sweeps at Casa Grande, Pinal County. (Ariz. Coop. Sur.).

SUGARBEETS

BET WEBWORM (Loxostege sticticalis) - WYOMING - Larvae averaged 4 per 100 sweeps in Platte and Goshen Counties. (Parshall).

POTATOES, TOMATOES, PEPPERS

POTATO APHID (Macrosiphum euphorbiae) - WASHINGTON - Flight exceptionally heavy in Satus and Toppenish area, Yakima County, last of August and September 3. (Landis).

CABBAGE LOOPER (Trichoplusia ni) - DELAWARE - Larvae common and damage noticeable on many pepper plants in area of Sussex County. (Burbutis).

BEANS AND PEAS

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - GEORGIA - Severe in seedling peas in Spalding County. (Dupree).

GREEN CLOVERWORM (Plathypena scabra) - WISCONSIN - This species and Colias eurytheme (alfalfa caterpillar) decreased on beans due to natural or chemical controls. Most infestations not severe on snap beans in Waushara County. (Wis. Ins. Sur.).

COLE CROPS

CABBAGE LOOPER (Trichoplusia ni) - NEW JERSEY - Eggs and larvae still troublesome on crucifers statewide. (Ins.-Dis. Newsltr.). GEORGIA - Moderate on Union County collards. (Scott, Harris). WISCONSIN - Most difficult year for control on cabbage. Insecticide dosage increase of 3 times ineffective. Bacillus thuringiensis gave excellent control for one grower. (Wis. Ins. Sur.).

IMPORTED CABBAGEWORM (Pieris rapae) - NEW JERSEY - Larvae still troublesome on crucifers statewide. (Ins.-Dis. Newsltr.).

STRIPED FLEA BEETLE (Phyllotreta striolata) - TEXAS - Probably this species on roots of mustards, turnips, and collards in Harris County; some crops severely damaged. (Kay).

CUCURBITS

A NOCTUID MOTH (Pseudoplusia includens) - TEXAS - Larvae heavy on watermelons near Plantersville, Grimes County. (Green).

GENERAL VEGETABLES

NOCTUID MOTHS - MICHIGAN - Feltia subgothica counts past week highest (1,405) at Montcalm County blacklight station; totaled 371 September 1 and 417 September 2. Collected 148 moths same period at Lenawee County station. Agrotis ipsilon, Amathes c-nigrum, and Peridroma saucia counts remained normal during period at all blacklight stations; ranged from 28 at Newaygo County station to 129 at Lenawee County station. (Newman).

CABBAGE LOOPER (Trichoplusia ni) - NEW MEXICO - Eggs heavy on lettuce in Dona Ana County; controls applied frequently. (Nelson).

ONION MAGGOT (Hylemya antiqua) - COLORADO - Damaging few onion fields in southwestern area during harvest. (Bulla).

ONION THRIPS (Thrips tabaci) - COLORADO - Well controlled on onions during summer in southwestern area. (Bulla).

EUROPEAN EARWIG (Forficula auricularia) - NEVADA - Heavy, severely damaged vegetable gardens in Jarbidge, Elko County. (Urdahl).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Carpocapsa pomonella) - CALIFORNIA - Larvae heavy in apples at Knights Landing, Yolo County. (Cal. Coop. Rpt.). COLORADO - Very few larvae or stings in well-sprayed pear orchards in Mesa and Delta Counties where harvest complete. Moths continued in sex attractant traps through September 1. Mostly light numbers, few late larval entries in apple orchards where no late cover spray applied. (Bulla). INDIANA - Adults decreasing in field at Vincennes; 151 males (374 the previous week) caught in 30 sex traps. (Wong, Sept. 10).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - COLORADO - Continued to be taken in bait traps in Mesa County as of September 11. Up to 51 per 5 traps during August but ranged 1-15 per 5 traps per day in most orchards. Few larvae in apple and pear fruit; harvest nearly complete. (Bulla). INDIANA - Fourth flight continuing at Vincennes; 501 adults (461 last week) in bait jars. (Wong, Sept. 10).

RED-HUMPED CATERPILLAR (Schizura concinna) - COLORADO - Larvae on flowering crab apple in Fort Collins, Larimer County. This is a new county record. (Thatcher, Aug. 23).

LESSER PEACH TREE BORER (Synanthedon pictipes) - INDIANA - Adult captures at Vincennes similar to previous week with 266 males. (Wong, Sept. 10).

APPLE MAGGOT (Rhagoletis pomonella) - INDIANA - Caught 85 adults on stickyboards at Vincennes. (Wong, Sept. 10). WISCONSIN - Damage heavy in poorly treated apples. Adults continue active but most of danger past. Highest collection (33) August 27 to September 10 at Baraboo, Sauk County. (Wis. Ins. Sur.).

WALNUT HUSK FLY (Rhagoletis completa) - OREGON - Larvae light at Oakland and Yoncalla, Douglas County; adults active at Roseburg, Douglas County, and Medford, Jackson County. (Larson). Adult trapped at Newberg, Yamhill County, by N.H.

Anderson. This is a new county record. (Westcott). UTAH - Infested ripening late peaches in several Salt Lake County home orchards. Similar peach infestations occurred in Weber and Box Elder Counties in past years. (Knowlton, Sept. 13).

A TEPHRITID FLY (Rhagoletis suavis) - NEW YORK - Infested 2 commercial peach orchards at Bells Pond and Viewmonte, Columbia County, in early September. Adults numerous on few trees in Bells Pond orchard September 10; fewer numbers throughout remainder of block. No adults found in Viewmonte orchard sprayed previous evening. Egg punctures ranged 1-11 per fruit and eggs averaged 17 per puncture. Infested most fruits checked. (Dean).

SAN JOSE SCALE (Aspidiotus perniciosus) - OREGON - Crawlers noticed since May at Medford, Jackson County. First noted in 1967 in December. First time crawlers observed for such an extended period in this area. (Gentner).

TWO-SPOTTED SPIDER MITE (Tetranychus urticae) - COLORADO - Active in all pear and apple areas up to September; foliage "burn" evident in many orchards. High overwintering numbers around trunks of trees. (Bulla).

ERIOPHYID MITES - OREGON - Some Epitrimerus pyri damage to pears appearing at Medford, Jackson County. (Berry). UTAH - Eriophyes pyri very heavy on Fameuse apples at Wellsville, Cache County. (Knowlton, Sept. 10).

HICKORY SHUCKWORM (Laspeyresia caryana) - ALABAMA - Developing larvae in shucks of pecans plus effects of dry weather and aphid leaf damage continue to cause "nut drop" in orchards in southern and central areas. (Turner et al.).

FALL WEBWORM (Hyphantria cunea) - ALABAMA - Webbing and leaf feeding heavy on Covington County pecan trees; widespread in Baldwin County. (Linder et al.).

BLACK PECAN APHID (Myzocallis caryaefoliae) - ALABAMA - This and yellow aphids built up to troublesome populations in many untreated pecan orchards in Dallas, Macon, Barbour, Henry, and Covington Counties. (Alsobrook et al.).

PECAN LEAF PHYLLOXERA (Phylloxera notabilis) - ALABAMA - Heavy on leaves of about half of 20-acre Baldwin County pecan orchard. (Leeper et al.).

CITRUS

FALSE SPIDER MITES (Brevipalpus spp.) - FLORIDA - "An 18-year survey of Brevipalpus mites on citrus was analyzed to account for the almost complete disappearance in Florida of leprosis (nailhead rust, Florida scaly bark). B. californicus (Banks), the mite responsible for leprosis in Florida, was found occasionally on citrus in various parts of the State, but only in Volusia County and in Sumter County was it accompanied by leprosis. B. obovatus Donnadieu, the cause of leprosis in South America, was encountered twice on citrus (a new host record for the State), but symptoms of leprosis were not in evidence. In caged experiments, however, B. obovatus did produce leprosis. B. phoenicis (Geijskes) was found on citrus throughout the State, often in large numbers, but no economic consequences attended infestations. A description is given of 'false leprosis,' a disorder of unknown etiology that is often mistaken for leprosis." (Knorr, Denmark, Burnett). This is the abstract for the paper "Occurrence of Brevipalpus Mites, Leprosis, and False Leprosis in Florida."* (PPC).

*Knorr, L.C., Denmark, H.A., and Burnett, H.C., 1968. Fla. Ent. 51(1):11-17.

Citrus Insect Situation in Florida - End of August - CITRUS RUST MITE (Phyllocoptura oleivora) infested 52 percent of groves (norm 50 percent); 41 percent economic (norm 31 percent). Population dropped out of high range for first time since September 1967. Further decrease to normal low level for September expected. Heavier on fruit than on leaves. About 20 percent of groves in all districts will harbor heavy infestations. Highest districts west, central, and south. High on fruit but not on leaves in east district. TEXAS CITRUS MITE (Eutetranychus banksi) infested 23 percent of groves (norm 23 percent); 7 percent economic (norm 9 percent). Below normal and in very low range. Further decrease expected. Highest district west. CITRUS RED MITE (Panonychus citri) infested 32 percent of groves (norm 27 percent); 7 percent economic (norm 13 percent). Near normal low level for time of year. Some further decrease expected. Few scattered groves will develop moderate to heavy infestations. Highest district west. GLOVER SCALE (Lepidosaphes gloverii) infested 43 percent of groves (norm 44 percent); less than 1 percent economic (norm 10 percent). PURPLE SCALE (L. beckii) infested 32 percent of groves (norm 46 percent); less than 1 percent economic (norm 2 percent). CHAFF SCALE (Parlatoria pergandii) infested 19 percent of groves (norm 37 percent); less than 1 percent economic (norm 4 percent). YELLOW SCALE (Aonidiella citrina) infested 27 percent of groves (norm 48 percent); less than 1 percent economic (norm 8 percent). An ARMORED SCALE (Unaspis citri) infested 14 percent of groves; 1 percent economic. Except for U. citri, all preceeding scales below normal and in moderate or low range in all districts. Slight decrease expected. U. citri expected to increase. MEALYBUGS infested 57 percent of groves; 8 percent economic. Above normal for time of year, but infestations mostly light and decreasing. WHITEFLIES infested 38 percent of groves; 18 percent economic. Near normal and in low range. Adults will be more numerous but not of much importance at this time. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

ORANGE-DOG (Papilio cressphontes) - ARIZONA - Heavy feeding on terminal growth in citrus nurseries at Yuma, Yuma County. Control being applied. Much feeding injury to home citrus trees in Maricopa County. (Ariz. Coop. Sur.).

A LEAF ROLLER MOTH (Platynota stultana) - ARIZONA - Treatments in progress in nurseries and young groves at Yuma, Yuma County. (Ariz. Coop. Sur.).

CITRUS THRIPS (Scirtothrips citri) - ARIZONA - Many trees damaged in Salt River Valley. Damaged new growth in nurseries at Yuma, Yuma County. (Ariz. Coop. Sur.).

CITRUS RED MITE (Panonychus citri) - CALIFORNIA - Heavy on citrus in Mill Valley and San Rafael, Marin County. (Cal. Coop. Rpt.).

OTHER TROP. & SUBTROP. FRUITS

CORN SAP BEETLE (*Carpophilus dimidiatus*) - ARIZONA - Damaging many ripening figs in home plantings in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

OLIVE SCALE (*Parlatoria oleae*) - CALIFORNIA - Medium on olive trees at Olivehurst, Yuba County. (Cal. Coop. Rpt.).

ORNAMENTALS

A JAPANESE WEEVIL (*Pseudocneorhinus bifasciatus*) - INDIANA - Adults common and damaging foliage of mockorange, privet, rose, spirea, and weigela shrubs in yard at Vincennes, Knox County, June 26, 1968. Collected by R.E. Dolphin. Det. by R.E. Warner. This is a new State record. (Dolphin).

A WEEVIL (*Brachyrhinus cribricollis*) - ARIZONA - Heavy in many privet, pyracantha, and chrysanthemum plantings at Tucson, Pima County. (Ariz. Coop. Sur.).

A PTEROPHORID MOTH (*Platyptilia antirrhina*) - OREGON - All instars infested 90+ percent of plants in greenhouse planting of snapdragons at Hillsboro, Washington County. (Hemmerling, Westcott). Collected by J.E. Davis from Yachats, Lincoln County, in July 1947; adults reared by F.P. Larson from snapdragons at Salem, Marion County, in 1949. Probably widespread in this area, but of relatively sporadic economic importance. (Westcott).

NOCTUID MOTHS (*Heliothis* spp.) - ALABAMA - Larvae destroying rosebuds in central and southern areas. Flight heavy recently. Available food low; selecting less desirable food plants for egg laying. (Hagler et al.).

EUROPEAN EARWIG (*Forficula auricularia*) - UTAH - Injury to lilac foliage and to some flowering plants serious in some Logan, Cache County, and Salt Lake City home gardens. (Knowlton, Sept. 10).

CRICKETS - ALABAMA - Several species feeding on and destroying ornamental value of many early opening camellia flowers in Mobile County. (Seibels).

SPIDER MITES (*Tetranychus* spp.) - OREGON - Building up to economic levels on various evergreens in several Salem area nurseries in Marion County. (Wheeler).

FOREST AND SHADE TREES

SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*) - MINNESOTA - Surveys past several weeks in counties adjacent to known infested areas showed no further spread. (Minn. Ins. Rpt.).

NANTUCKET PINE TIP MOTH (*Rhyacionia frustrana*) - OKLAHOMA - Larvae and pupae heavy in Payne County pine plantation. (Okla. Coop. Sur.).

PINE BUTTERFLY (*Neophasia menapia*) - OREGON - Adults abundant on west side of Santiam Pass, Linn County, down to elevation of approximately 3,500 feet. Most specimens worn, indicating flight peaked probably during mid-August. Usually most destructive to ponderosa pine but no ponderosa pine in area examined. (Westcott).

PALMERWORM (*Dichomeris ligulella*) - OHIO - Aerial survey in August over 3.5 million acres of private land and State forests and parks. Heavy defoliation in Mohican and Brush Creek State Forests, on private land in east-central counties, and near Otway in Scioto County. (Seine).

JAPANESE BEETLE QUARANTINE

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
COOPERATING WITH AFFECTED STATES



COUNTIES ENTIRELY COLORED ARE COMPLETELY REGULATED; COUNTIES WITH COLORED DOT ARE PARTIALLY REGULATED.

GENERALLY INFESTED AREA - STATE AND FEDERAL REGULATIONS.
(ERADICATION TREATMENTS NOT IN PROGRESS OR PLANNED)

SUPPRESSIVE AREA - STATE AND FEDERAL REGULATIONS.
(SUPPRESSIVE TREATMENTS IN PROGRESS OR PLANNED)

STATE REGULATIONS ONLY. (SUPPRESSIVE TREATMENTS
IN PROGRESS OR PLANNED)

RESTRICTIONS ARE IMPOSED ON MOVEMENT OF REGULATED ARTICLES FROM A REGULATED AREA AS FOLLOWS.

1. FROM RED INTO OR THROUGH GREEN, BLUE, OR WHITE.
2. FROM GREEN INTO OR THROUGH WHITE OR BLUE.
3. GREEN INTO GREEN
4. WITHIN GREEN.*
5. FROM BLUE INTO ANY OTHER AREA.**

* IF REQUIRED BY AN AUTHORIZED INSPECTOR.

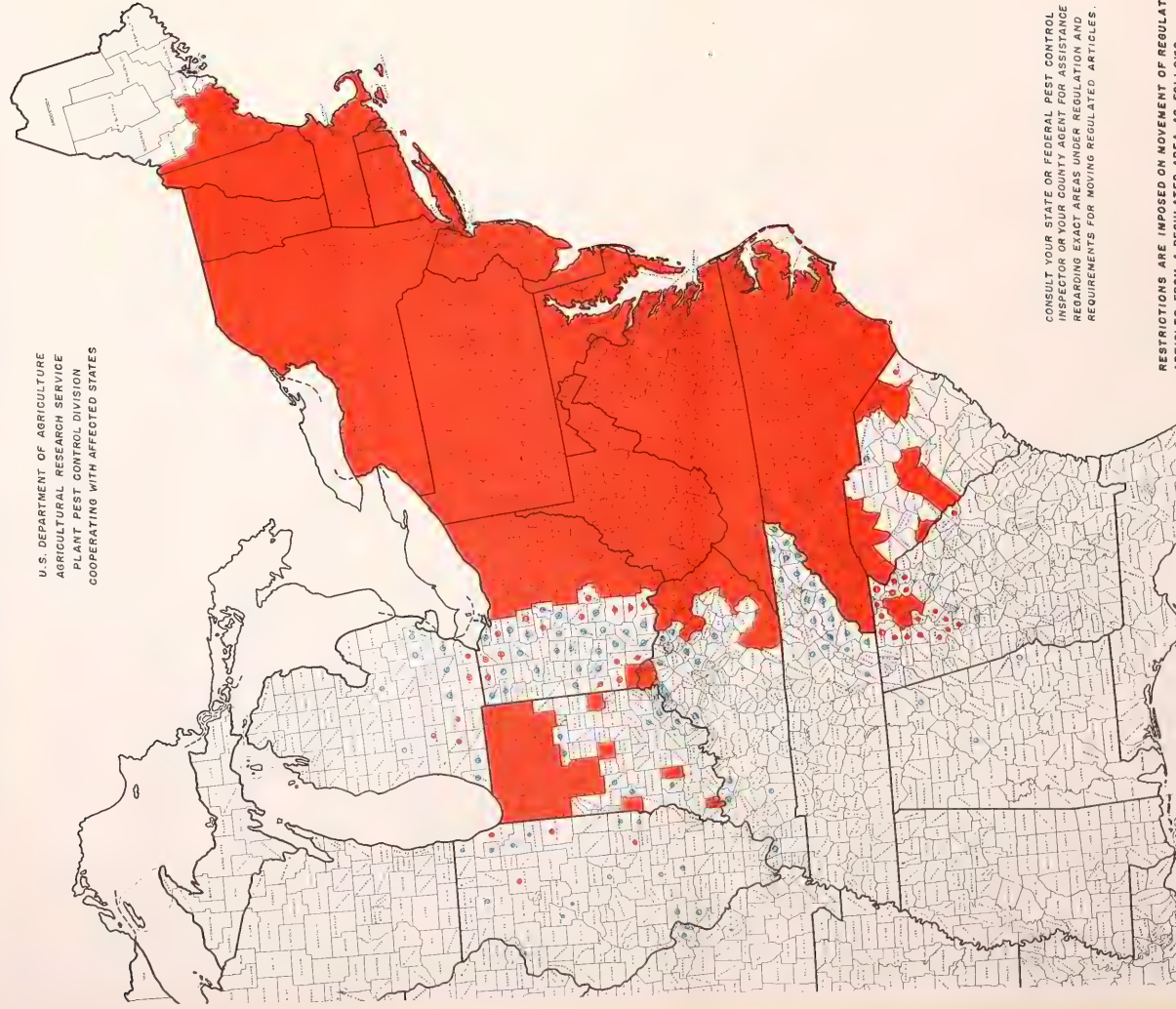
** IF REQUIRED BY APPROPRIATE STATE QUARANTINE OR BY AN AUTHORIZED INSPECTOR.

SEE REVERSE SIDE FOR REQUIREMENTS CONCERNING CERTIFICATION OF REGULATED ARTICLES

Revised July 22, 1968.

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CONSULT YOUR STATE OR FEDERAL PEST CONTROL INSPECTOR OR YOUR COUNTY AGENT FOR ASSISTANCE REGARDING EXACT AREAS UNDER REGULATION AND REQUIREMENTS FOR MOVING REGULATED ARTICLES.

RESTRICTIONS ARE IMPOSED ON MOVEMENT OF REGULATED ARTICLES FROM A REGULATED AREA AS FOLLOWS:

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2. FROM GREEN INTO OR THROUGH WHITE OR BLUE.
3. GREEN INTO GREEN
4. WITHIN GREEN. *
5. FROM BLUE INTO ANY OTHER AREA. **

* IF REQUIRED BY AN AUTHORIZED INSPECTOR.

** IF REQUIRED BY APPROPRIATE STATE QUARANTINE OR BY AN AUTHORIZED INSPECTOR.

THE FOLLOWING CROPS OR ARTICLES MUST BE MOVED UNDER CERTIFICATE OR
PERMIT YEAR-ROUND EXCEPT AS INDICATED:

1. Soil, compost, decomposed manure, humus, muck, and peat,
separately or with other things.

Soil samples of any size shipped to U.S. Army Corps of Engineers
Soil Laboratories within the conterminous U.S. are exempt.
Soil samples of one pound or less are exempt if shipped to a
designated laboratory.*

Compost, decomposed manure, humus, and peat are exempt** if
dehydrated, ground, pulverized, or compressed.

2. Plants with roots, except soil-free aquatic plants, moss, and
Lycopodium (clubmoss or ground-pine or running pine).

3. Grass sod.

4. True bulbs, corms, rhizomes, and tubers of ornamental plants
when freshly harvested or uncured.

True bulbs, corms, rhizomes, and tubers (other than clumps
of dahila tubers) of ornamental plants are exempt** if free
of soil.

5. Plant crowns and roots for propagation.

6. Used mechanized soil-moving equipment.

Used mechanized soil-moving equipment is exempt** if cleaned
and repainted.

FALL WEBWORM (Hyphantria cunea) - OHIO - Defoliation continues on various deciduous trees throughout most of eastern half of State. Larvae nearly full grown in most cases; feeding damage should soon level off. (Rose).

MIMOSA WEBWORM (Homadaula aisocentra) - OKLAHOMA - Leaf damage averaged 5 percent on mimosa in southwest Oklahoma City, Oklahoma County. This is a new county record. Continues heavy on mimosa in Mayes County. (Okla. Coop. Sur.).

AN AGERIID MOTH (Aegeria tibialis) - CALIFORNIA - Larvae and adults heavy on poplar trees at Dixon, Solano County. This species uncommon but noted in several locations in 1968. (Cal. Coop. Rpt.).

BOXELDER PSYLLID (Psylla negundinis) - MARYLAND - Collected on boxelder at Chevy Chase, Montgomery County, April 29, 1968, by C.W. McComb. Det. by L.M. Russell. This is a new State record. (U. Md., Ent. Dept.).

ELM LEAF BEETLE (Pyrhalta luteola) - GEORGIA - Larvae numerous on Spalding County elms. (Tippins). OKLAHOMA - Defoliated 33-50 percent of few American elms in Major County. Pupation of third generation beginning in Payne County. Damaged up to 95 percent of Siberian elms in Ellis County. Continues heavy in Mayes County. (Okla. Coop. Sur.). COLORADO - Larvae damaging elm at Lafayette, Boulder County. (Hantsbarger).

A COREID BUG (Leptocoris rubrolineatus) - OREGON - Nymphs and adults extremely abundant, mostly on maple, at Medford, Jackson County; believed causing some damage to pear fruits. (Berry).

CICADAS - ALABAMA - Very heavy emergence of several species at Semmes, Mobile County. Numbers much heavier in southern Mobile and Baldwin Counties than in other areas. (Seibels et al.).

MAN AND ANIMALS

MOSQUITOES - TEXAS - Culex pipiens quinquefasciatus occurred throughout Jefferson County during August. C. salinarius peaked at 182 per trap night in early August at Pleasure Island; few to moderate rest of month. Aedes sollicitans moderate at Port Arthur first week of August; uncommon in rest of county. Psorophora ciliata noted only in north Beaumont area. P. confinnis occurred throughout county; annoying in midcounty area for short period; reached 200 per trap night August 21 in north Beaumont area. Mansonia perturbans taken regularly in Pleasure Island light trap; occasionally in 2 Beaumont light traps and airport light trap. Uranotaenia lowii generally more numerous than U. sapphirina. (Jefferson Co. Mosq. Control Dist.). FLORIDA - Mosquitoes more abundant than usual; very annoying to field workers during summer at Sanford, Seminole County. (Greene). Mostly P. confinnis abundant and annoying cattle in Everglades area. (Janes). MICHIGAN - Mosquitoes still abundant in certain areas; recent cool weather helped to abate much of nuisance. (Shinkle, Sept. 9). MINNESOTA - Aedes vexans comprised 73 percent of 5,043 females in 16 light traps August 31 to September 6. A. vexans accounted for over 85 percent of catch in daytime and evening bite collections. September rains produced very limited brood in runoff areas. Light trap catches for September 7-13 very low due to cold nights and aging population. Egg samples September 10 showed 34 (previous week 60) percent hatch. Nearly 100 percent diapause expected in another 7 to 14 days. (Minn. Ins. Rpt.).

SCREW-WORM (Cochliomyia hominivorax) - Total of 295 cases reported in U.S. September 2-14 as follows: TEXAS - Andrews 1, Atascosa 4, Austin 1, Bee 3, Bexar 1, Brewster 12, Brooks 14, Crockett 19, Coke 2, Culberson 1, De Witt 2, Edwards 7, Goliad 1, Gillespie 1, Glasscock 1, Gonzales 1, Hidalgo 5, Irion 1, Jeff Davis 16, Jim Hogg 3, Jim Wells 4, Karnes 1, Kimble 5, Kenedy 6, Kendall 1, Kinney 1, Mason 2, Maverick 1, McCulloch 1, Nueces 1, Pecos 45, Presidio 1, Refugio 2, Real 1, Reeves 3, Starr 5, Sutton 2, San Patricio 1, Terrell 46, Val Verde 42, Victoria 1, Ward 1, Willacy 1; ARIZONA - Cochise 2, Gila 1, Graham 3, Greenlee 1, Pima 2, Pinal 1, Santa Cruz 1, Yavapai 4; NEW MEXICO - Eddy 1, Grant 5; CALIFORNIA - San Diego 4. Total of 486 cases reported in portion of

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Soil samples of any size shipped to U.S. Army Corps of Engineers Soil Laboratories within the conterminous U.S. are exempt.

Soil samples of one pound or less are exempt if shipped to a designated laboratory.*

Compost, decomposed manure, humus, and peat are exempt** if dehydrated, ground, pulverized, or compressed.

2. Plants with roots, except soil-free aquatic plants, moss, and Lycopodium (clubmoss or ground-pine or running pine).

3. Grass sod.

4. True bulbs, corms, rhizomes, and tubers of ornamental plants when freshly harvested or uncured.

True bulbs, corms, rhizomes, and tubers (other than clumps of dahlia tubers) of ornamental plants are exempt** if free of soil.

5. Plant crowns and roots for propagation.

6. Used mechanized soil-moving equipment.

Used mechanized soil-moving equipment is exempt** if cleaned and repainted.

*Information as to designated laboratories may be obtained from an inspector.

**Exempt if not exposed to infestation after cleaning or other prescribed handling.

Barrier Zone in Republic of Mexico September 8-14 as follows: Territorio sur de Baja California 71, Sonora 90, Chihuahua 133, Coahuila 146, Nuevo Leon 31, and Tamaulipas 15. Total of 54 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 102,418,000; New Mexico 4,550,000; Arizona 10,710,000; California 900,000; Mexico 72,970,000. (Anim. Health Div.).

HORN FLY (*Haematobia irritans*) - FLORIDA - Heavy, 600 per head on cattle at Belle Glade, Palm Beach County. (Janes). OKLAHOMA - Counts per head averaged 400 on cattle in Major County and ranged 225-300 in Payne and Noble Counties. Moderate to heavy in Garvin, Marshall, Cleveland, and Mayes Counties. (Okla. Coop. Sur.). ILLINOIS - Average per head by district: Southeast 200, southwest 117, and northeast 66. (Ill. Ins. Rpt.). MICHIGAN - Numerous on beef cattle at Lake City, Missaukee County. Averaged as high as 200 adults per head with high of over 400. (Janes, Sept. 9). NEBRASKA - Up to 500 per side on bull herd in Franklin County. Averaged 20-30 per side on pastured calves in Jefferson County. (Roselle). SOUTH DAKOTA - High on untreated cattle in Sully and Potter Counties; ranged 700-1,000+ per side on bulls and 200-400 per side on cows. (Jones). UTAH - Annoyance still conspicuous in untreated herds in Box Elder, Davis, Weber, and Cache Counties. (Knowlton, Sept. 13).

FACE FLY (*Musca autumnalis*) - NEVADA - Entering hibernation in north-central Elko County. Light to medium during summer; pinkeye light. (Wilson). UTAH - Annoyance to horses and cattle still conspicuous in Cache, Box Elder, Weber, and Davis Counties. (Knowlton, Sept. 13). NEBRASKA - Averaged 6 per face on bull herd in Franklin County. Averaged 12-14 per face on pastured calves in Jefferson County. (Roselle). SOUTH DAKOTA - Less than 2 per face on small Angus herd north of Gettysburg, Potter County. (Jones). ILLINOIS - Averaged per face by district: Southeast 13, southwest 31, and northeast 6. (Ill. Ins. Rpt.).

HOUSE FLY (*Musca domestica*) - OKLAHOMA - Averaged 5 per scudder grid in untreated Payne County barns. Moderate in Choctaw County homes. (Okla. Coop. Sur.). NEBRASKA - Averaged 9-10 per scudder grid in 3 Lancaster County feedlots. (Campbell). ILLINOIS - Heavy migration into houses and livestock barns due to cool weather past week. (Ill. Ins. Rpt.). MICHIGAN - Moderate in and around handling pens, barns, sheds, and feedlots in central and southern areas. (Janes, Sept. 9). MINNESOTA - Very heavy on farms where little or no sanitation practiced. (Minn. Ins. Rpt.).

STABLE FLY (*Stomoxys calcitrans*) - OKLAHOMA - Ranged 7-8 per head on Noble and Payne County cattle. (Okla. Coop. Sur.). NEBRASKA - Averaged 10-15 per leg on 3 Lancaster County feedlot herds. (Campbell). ILLINOIS - Averaged per head by district: Southeast 4, southwest 32, and northeast 0. (Ill. Ins. Rpt.). MICHIGAN - Moderate in and around handling pens, barns, sheds, and feedlots in central and southern areas. (Janes, Sept. 9).

HORSE FLIES (*Tabanus* spp.) - OKLAHOMA - Moderate on cattle in Choctaw County. *T. atratus* and *T. sulcifrons* averaged 5 per 10 head and *T. lineola* complex 1.5 per head on Payne and Noble County cattle. (Okla. Coop. Sur.).

LONE STAR TICK (*Amblyomma americanum*) - OKLAHOMA - Moderate on Choctaw County cattle. (Okla. Coop. Sur.).

STORED PRODUCTS

INDIAN-MEAL MOTH (*Plodia interpunctella*) - MISSOURI - Heavy in some stored corn, wheat, and soybeans on farms in Audrain, Lafayette, Putnam, Rails, and Saline Counties. (Munson).

GRAIN MITE (*Acarus siro*) - NORTH DAKOTA - Heavy in stored wheat in McHenry County; controls applied. (McBride).

BENEFICIAL INSECTS

LADY BEETLES - WYOMING - Adults and larvae 11-800 per 100 sweeps on alfalfa in Platte, Goshen, and Laramie Counties. (Parshall).

DAMSEL BUGS (*Nabis* spp.) - WYOMING - Adults and nymphs 16-300 per 100 sweeps on alfalfa in Platte, Goshen, and Laramie Counties. (Parshall).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

GRASSHOPPERS - IOWA - *Melanoplus femurrubrum* dominant in 9 south-central and south-west counties surveyed this week; counts were light and threatening. (Iowa Ins. Sur., Sept. 6). SOUTH DAKOTA - Adults light, less than 7 per square yard, in fields in Clark, Deuel, Grant, northern Codington, and southern and western Roberts Counties. *M. femurrubrum* and *M. bivittatus* major species. Development ranged fourth instar to adult with 80 percent in adult stage. (Jones).

JAPANESE BEETLE (*Popillia japonica*) - OHIO - Quarantine regulated area extended to Erie and Huron Counties and part of Sandusky County; regulated area expanded in Fairfield, Franklin, Hocking, Richland, and Ross Counties. (Rose).

MORMON CRICKET (*Anabrus simplex*) - UTAH - Adults collected 15 miles southwest of Randolph, Rich County, by G. Sayer. Det. by H.F. Thornley. Appearance unusually late for season. (Knowlton, Sept. 13).

PINK BOLLWORM (*Pectinophora gossypiella*) - CALIFORNIA - Kern County: Released 388,850 sterile moths; recovered 3 sterile moths in sex lure traps. San Diego County: Released 6,000 sterile moths in 5-acre cotton planting in Borrego Valley, recovered 4; infestations 18 percent. San Joaquin Valley: Survey continues negative. Imperial County: Infestations averaged 15-20 percent in desert cotton in Imperial Valley; decreased to near 9 percent in Bard Valley. Riverside County: Infestations averaged about 20 percent in Coachella and Palo Verde Valleys. (Cal. Coop. Rpt.). NEVADA - One male in sex lure trap in hollyhock September 3; trapped 6 males September 6 and 2 males September 9 in sex lure traps in cotton in Moapa Valley, Clark County. (Yamashita). ARIZONA - Heaviest larval count in lint cleaners at Texas Hill, Yuma County. (Ariz. Coop. Sur.). NEW MEXICO - Based on 25-boll samples, green-boll infestations ranged 0-8 percent in 6 cotton fields in southern Dona Ana County. No increase over previous week. (Campbell).

WESTERN GRAPE LEAF SKELETONIZER (*Harrisina brillians*) - CALIFORNIA - New infestation discovered at Clovis, Fresno County. Delimiting survey involved 13 properties on 9 blocks in one-mile area in center of Clovis. Heaviest damage centered on 3 properties surrounding original infestation. First to fifth instars present but no moths. All properties treated in known infested area. (Cal. Coop. Rpt.).

WHITE-FRINGED BEETLES (*Graphognathus* spp.) - LOUISIANA - *G. leucoloma striatus* collected in Terrebonne Parish August 29 for a new parish record. SOUTH CAROLINA - *G. leucoloma fecundus* collected in Greenwood County August 26 for a new county record. (PPC).

INSECT DETECTION

New State Records

A NOCTUID MOTH (Agriopodes fallax) - DELAWARE - Adult in blacklight trap at Bridgeville, Sussex County. Collected by P.P. Burbutis June 24, 1968. Det. by D.F. Bray. Recorded (Forbes, 1954) as feeding on Viburnum sp. (Burbutis).

A JAPANESE WEEVIL (Pseudocneorhinus bifasciatus) - INDIANA - Adults on mockorange, privet, rose, spiraea, and weigela at Vincennes, Knox County, June 26, 1968. Collected by R.E. Dolphin. Det. by R.E. Warner. (p. 904).

BOXELDER PSYLLID (Psylla negundinis) - MARYLAND - Collected on boxelder at Chevy Chase, Montgomery County. April 29, 1968, by C.W. McComb. Det. by L.M. Russell. (p. 905).

New County, Parish, and Island Records

SPOTTED ALFALFA APHID (Therioaphis maculata) - SOUTH DAKOTA - Day, Grant, and Roberts Counties. (p. 895).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - ILLINOIS - Putnam, Marshall, Kendall, Kane, Boone, McHenry, Tazewell, Schuyler, Cass, and Pike Counties. SOUTH DAKOTA - Campbell County. (p. 896).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - KANSAS - Jewell and Republic Counties. (p. 896).

RED-HUMPED CATERPILLAR (Schizura concinna) - COLORADO - Larimer County. (p. 901).

WALNUT HUSK FLY (Rhagoletis completa) - OREGON - Yamhill County. (p. 901-902).

MIMOSA WEBWORM (Homadaula anisocentra) - OKLAHOMA - Oklahoma County. (p. 905).

WHITE-FRINGED BEETLES (Graphognathus spp.) - LOUISIANA - G. leucoloma striatus in Terrebonne Parish. SOUTH CAROLINA - G. leucoloma fecundus in Greenwood County. (p. 907).

BEAN FLY (Melanagromyza phaseoli) - HAWAII - Maui Island. (p. 909).

CORRECTIONS

CEIR 18(16):313 - PINE SAWFLIES (Neodiprion spp.) - ARKANSAS - Change N. taedae linearis to N. lecontei. Det. by L.O. Warren. (Boyer).

CEIR 18(30):701 - APHIDS - NEW JERSEY - Pemphigus bursarius should read Pemphigus sp. Det. by C.F. Smith. (Race).

HAWAII INSECT REPORT

Turf, Pasture - A GRASS WEBWORM (*Herpetogramma licarsisalis*) continued moderate to heavy on Hilo, carpet, and Kikuyu grasses at Hilo and Kona, Hawaii Island. Parasitism by *Trichogramma semifumatum* (a minute egg parasite) averaged 91.6 percent at 9 localities. (Yoshioka).

General Vegetables - BEAN FLY (*Melanagromyza phaseoli*) reported for first time on Maui; completely destroyed 2,000 square feet of new snap bean planting at Lahaina-luna; larvae heavily infested stems. All stages heavy on lima, yard-long, and lablab beans at Honolulu International Airport and on snap beans at Waimanalo, Oahu. (Miyahira et al.).

Fruits - Nymphs and one adult of SOUTHERN GREEN STINK BUG (*Nezara viridula*) feeding on papaya tree trunks at Pohoiki and Puna, Hawaii Island. (Davis et al.).

Ornamentals - KOU LEAFWORM (*Ethmia nigroapicella*) completely defoliated kou trees (*Cordia subcordata*) at Kailua and Kona, Hawaii Island. Normally active near end and/or beginning of year, but noted in this area throughout year. (Yoshioka).

Man and Animals - HORN FLY (*Haematobia irritans*) adults heavy on cattle in Auwahi, Maui, at 1,000 feet elevation. (Armitage, Miyahira).

Beneficial Insects - Activity of a TORTRICID MOTH (*Apotoforma* sp.) conspicuous on blackberry plants in Volcano area, Hawaii Island. Damage heaviest on terminal shoots. MELASTOMA BORER (*Selca brunella*) numerous on glory-bush (*Tibouchina semidecandra*) at Mountain View, Hawaii Island. Activity most noticeable on terminal shoots and fruits. (Yoshioka).

Miscellaneous - Nymphs and adults of a GRASSHOPPER (*Oedaleus abruptus*) light on dry grass at Hickam Air Force Base at Honolulu, Oahu. Spread from untreated 10-acre spot inside initially treated area; controls applied to this spot September 7. Re-treatment of general area begun second week of September. No spread observed beyond boundaries of initially treated area. (Olson).

Weather continued from page 894.

TEMPERATURE: Cold, dry air, moving in behind the frontal system that crossed the eastern portion of the Country the first three days of the period, reduced minimum temperatures to record low levels (40's and 50's) for the 10th and 11th in portions of the lower Mississippi Valley. Fair, sunny weather with warm days and cool nights was the rule the rest of the week. The western half of the Nation was abnormally warm with maxima in the 90's in the northern Great Plains and exceeding 110° in the southwestern desert. During the weekend cooler air covered the Western States and frost was reported in the higher mountains as far south as Arizona.

VIOLENT WEATHER: Frontal thunderstorms caused damage in scattered areas of the East early in the period. Tornadoes were reported at Cedar Springs, Michigan, and ten miles north of Toledo, Ohio, on the 9th, and seven miles southwest of Lake Charles, Louisiana, and 10 miles north of Winner, South Dakota, on the 14, with damage limited to some farm buildings. High winds downed a 220-foot radio tower at Beaumont, Texas, on the 15th. (Summary supplied by Environmental Data Service, ESSA.)

LIGHT TRAP COLLECTIONS

State	County	Locality	Date	Time of Day	Number of Traps	Number of Insects	Number of Spiders	Number of Beetles	Number of Moths	Number of Hymenoptera	Number of Diptera	Number of Coleoptera	Number of Lepidoptera	Number of Neuroptera	Number of Hemiptera	Number of Thysanoptera	Number of Mites	Number of Other Arthropods	Number of Plants	Number of Fungi	Number of Bacteria	Number of Viruses	Number of Protozoa	Number of Other Microbes
FLORIDA		Gainesville 9/10	BL		3																			
KANSAS		Garden City 9/7-9, 11	BL		491	344	21	153	4	2	69	12												
MISSISSIPPI		Stoneville 9/7-13	54-86	1.25	2BL	11	31	20	3	151	6	3	100	28	87	21	25							
MISSOURI		Portageville 9/7-13																						
NEW JERSEY		Aura 9/4-11	BL		12																			
		Evesboro 9/4-11	BL		8																			
		Plainsboro 9/4-11	BL		8																			
		Scabrook 9/4-11	BL		34																			
OHIO		Willard 9/5-11	BL		15																			
		Wooster 9/5-11	BL		27																			
TEXAS		Waco 9/7-13	BL		24																			
WISCONSIN		Madison 9/5-12	BL		8	1																		

SURVEY METHODS

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Part X

Additional copies of Parts I through X of this bibliography are available from Survey and Detection Operations.

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AGRICULTURAL RESEARCH SERVICE

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PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

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Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

CORN EARWORM damage heavy on lima beans in southern Delaware; problem on snap beans on Eastern Shore of Virginia; severe on fall sweet corn in South Carolina; damage heavy in much soybean acreage in Elmore County, Alabama. GREENBUG causing much damage to sorghum in Fresno County, California. (p. 917).

FALL ARMYWORM severe on fall sweet corn in South Carolina; heavy in late-planted sweet corn in Lancaster County, Nebraska. SORGHUM WEBWORM heavy on grain sorghum in Mayes and Craig Counties, Oklahoma. (pp. 917-918).

HESSIAN FLY survey results reported from Kansas. PALE WESTERN CUTWORM adult flights heavy in Nebraska Panhandle; damaging larval populations possible in wheat next spring in State. (p. 919).

ALFALFA CATERPILLAR adult flights heavy in alfalfa in Pinal and Maricopa Counties, Arizona. (p. 920).

BOLL WEEVIL continues heavy in northern Alabama. (p. 921). COTTON LEAF PERFORATOR larval damage heavy on cotton in Maricopa and Pinal Counties, and adult flights heavy in Yuma County, Arizona. (p. 922).

EUROPEAN CORN BORER becoming problem in pimento pepper fields in northeastern Alabama. (p. 922).

CABBAGE LOOPER larvae increasing on cole crops in Maricopa County and major problem on lettuce in Yuma County, Arizona. (pp. 922-923).

Total of 378 SCREW-WORM cases reported in U.S. September 15-21. STABLE FLY severe on livestock in 4 counties in Wisconsin. (p. 925).

Detection

For new county records see page 929.

Special Report

The Greenbug in the Atlantic Coast States. (pp. 930-938).

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WEATHER OF THE WEEK ENDING SEPTEMBER 23

HIGHLIGHTS: Early season cold in Northwest with heavy snowfall in northern Rockies. Frequent thunderstorms with scattered unusually heavy downpours in midcontinent. Mostly fair, sunny weather in East.

PRECIPITATION: With a slow eastward moving cold front in the midcontinent area the first part of the period, moderate to heavy rains and thunderstorms were widespread from the Mississippi Valley to the Appalachians on the 16th and 17th, continuing in the upper Mississippi Valley and Great Lakes area and along the western slopes of the Appalachians on the 18th and 19th. Warren, Arkansas, measured over 5 inches in a 24-hour period ending on the morning of the 16th, and more than 4 inches in 12 hours were reported in eastern Kansas and Nebraska. On the 17th tornadoes caused some damage to Beeville, Texas, and Wihaven Tennessee, and another tornado was reported near Cherokee, Iowa. High winds damaged homes and downed trees at Batesville, Arkansas, on the same date. A slow moving cold front entered the Pacific Northwest on the 17th and reached the Great Plains by the end of the week. Snow fell in the higher Rockies behind the midcontinent cold front and Leadville, Colorado, reported 3 inches on the ground on the morning of the 17th. On the 18th snowfall was reported down to 4,000 to 5,000 feet in Idaho and Montana. By the 20th a heavy snowstorm had developed in the northern Rockies and trees and utility lines were downed by wind and a foot of snow at Anaconda, Montana. On the morning of the 21st Cut Bank, Montana, reported 3 inches of snow on the ground and Helena 2 inches. On the last day of the period tornadoes were reported near Orange City, Hospers, and Alton, Iowa. Weekly precipitation totaled over 2 inches in much of the Mississippi Valley, along the north Pacific coast, and scattered spots in the northern Rockies. Little or none was reported east of the Appalachians from North Carolina to northern Maine and in the Far Southwest.

TEMPERATURE: The last week of the astronomical summer was much colder than normal in the West, about normal in the midcontinent area and South, and warmer than normal from the upper Mississippi Valley eastward. Generally rising temperatures in the Northeast during the week reached the middle and high 80's during the weekend. Temperatures were below normal most of the week in the West. Cold air moving in behind the midwestern cold front reduced temperatures to unusually low levels in the lower Great Plains about midweek. On the morning of the 18th El Paso, Texas, recorded an early season low of 45° and Fort Worth one of 51°. (Summary supplied by Environmental Data Service, ESSA.)

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

CORN EARWORM (*Heliothis zea*) - NEW JERSEY - Infestations still possible on lettuce despite recent cool weather. (Ins.-Dis. Newsltr.). DELAWARE - Larvae numerous, feeding injury heavy on lima bean pods in eastern Sussex County. (Burbutis). MARYLAND - Moth collections averaged less than 1 per night at blacklight trap in Centerville September 10-16. (U. Md., Ent. Dept.). VIRGINIA - Moths numerous in Accomack County; egg laying in progress on various hosts. Special problem on snap beans. (Hofmaster). SOUTH CAROLINA - This species and *Spodoptera frugiperda* (fall armyworm) severe on fall sweet corn; controls adequate where recommended. *H. zea* primary species on soybeans in nearly all counties except some in Piedmont area. New generation present in some counties; all stages noted in other counties. Dry weather in many areas reduced yield of beans. (Thomas, Sept. 18). ALABAMA - Larvae heavy, destroyed about 4-6 bushels of seed per acre in 250-acre soybean planting in Marengo County. Infestations spotted and lighter over much of county. Damage heavy in much acreage in Elmore County. Spotted damage in Colbert and Madison Counties; controls applied. (Miller et al.). Larvae light in pimento pepper planting on Sand Mountain; *Ostrinia nubilalis* (European corn borer) also present. (Parker et al.). MISSISSIPPI - Light in grain sorghum in Noxubee County. (Dinkins). WISCONSIN - Effects of earlier heavy flights noted in sweet corn; markedly affected production in some plants. (Wis. Ins. Sur.). MISSOURI - Ranged 1-10 per 10 heads on late dough-stage grain sorghum in southwest area. Larvae killed by fungus disease averaged 5-10 per 10 heads in same fields. (Craig, Thomas). KANSAS - Present in sorghum heads in most late fields in southeast and east-central districts. Larvae averaged 1-2 per head on 20-35 percent of heads in most fields. Averaged 5 per head on 90 percent of heads in one Linn County field; damage severe. Occasional larvae in alfalfa in southeast district. (Simpson).

CORN LEAF APHID (*Rhopalosiphum maidis*) - MARYLAND - Continues to decline on field corn in State. Light in ear husks and leaf sheaths in most late-maturing corn statewide. Parasitic wasps increasing. Field corn harvest underway in all sections. (U. Md., Ent. Dept.). KANSAS - Light, 15-50 per plant, in all sorghum examined in southeast and east-central districts; infestation ranged 10-25 percent in most cases. Aphids found behind leaf sheath. (Simpson).

GREENBUG (*Schizaphis graminum* (In broad sense))* - CALIFORNIA - Infestations continuing in and causing much damage to sorghum in Fresno County. Many fields maturing and being harvested. (Cal. Coop. Rpt.). OKLAHOMA - Ranged 5-100 per row foot in 4 volunteer wheatfields at Carnegie, Caddo County. (Okla. Coop. Sur.).

PAINTED LADY (*Vanessa cardui*) - ARKANSAS - Larvae on sunflower foliage in Lee and Cross Counties. Determined by E.P. Rouse. (Boyer).

POTATO LEAFHOPPER (*Empoasca fabae*) - WISCONSIN - Remains noneconomic on alfalfa, beans, and potatoes; seldom over 10 per sweep in marginal zone of alfalfa. (Wis. Ins. Sur., Sept. 13).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - SOUTH DAKOTA - Light, less than 10 per 100 sweeps, in alfalfa surveyed south of Ipswich, Edmunds County; west of Highmore, Hyde County; and southeast of Seneca, Faulk County. These are new county records. (Jones). KANSAS - Light, 5-25 per 10 sweeps, in most alfalfa checked in Woodson, Wilson, Montgomery, Allen, Neosho, Labette, Cherokee, Crawford, and Bourbon Counties. Ranged 100-300 per 10 sweeps in Linn and Miami Counties; up to 2,500 per 10 sweeps with severe damage in one Linn County field. (Simpson). OKLAHOMA - Ranged 15-200 per 10 sweeps on alfalfa checked in Tulsa, Wagoner, and Le Flore Counties. (Okla. Coop. Sur.). ARIZONA - Infested 4-year-old stand of Moapa alfalfa at Mesa, Maricopa County. Immediate treatment

* According to recent taxonomic studies by L.M. Russell. This aphid on sorghum appears to be this species.

recommended to prevent further spread. Determined by M.W. Nielson. (Ariz. Coop. Sur.). CALIFORNIA - This species and Acyrtosiphon pisum (pea aphid) heavy on Medicago sativa in Fresno, Fresno County. (Cal. Coop. Rpt.). OREGON - Ranged up to 50 per sweep in alfalfa near Hermiston, Umatilla County. Mainly apterae compared with mostly alates 2 weeks ago. Light in several alfalfa fields east of Boardman, Morrow County. None found in this area 2 weeks ago. (Westcott).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - DELAWARE - Adults remain abundant, averaged 50+ per night in blacklight trap collections in western Sussex County. (Burbutis). MARYLAND - Moths averaged 23+ per night in blacklight collections at Centreville, Queen Annes County, September 10-16. (U. Md., Ent. Dept.). OHIO - Second-generation larvae heavy on corn in some widespread areas over State; some heavy damage to garden sweet corn reported. (Rose). WISCONSIN - Effects of earlier heavy flights noticeable in sweet corn; markedly affected production in some plants. (Wis. Ins. Sur.). KANSAS - Larvae averaged 1 per stalk on 15 percent of grain sorghum field in Linn County. No stalk breakage noted. (Simpson). COLORADO - Larval infestation 12-100 percent in corn in Roggen area, Weld County. Larvae 12-250 per 100 plants in 5 cornfields in isolated valley; appeared to be center of infestation. Light in some corn 6 and 8 miles west of this valley. (Hantsbarger, Johnson).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - TEXAS - Light on sorghum near Northfield, Motley County; lodging grain sorghum stalks. (Pallmeyer). ARIZONA - Averaged 1 per stalk on sorghum in Pinal County and 1 per 10 stalks in Queen Creek area, Maricopa County. (Ariz. Coop. Sur.).

SUGARCANE BORER (Diatraea saccharalis) - TEXAS - Damaged late-planted grain sorghum in Uvalde and Kinney Counties. (Neeb, Keller).

SORGHUM WEBWORM (Celama sorghiella) - MISSOURI - Ranged 5-670 (average 50) per 10 heads in dough-stage sorghum in southwest area. (Craig, Thomas). KANSAS - Light, 1-5 per head, in most late sorghum examined in southeast district. Averaged 30-60 per head on 35 percent of heads in Linn County sorghum field. (Simpson). OKLAHOMA - Ranged up to 40 per head on grain sorghum in Ottawa County; heavy in Craig and Mayes Counties; averaged 15 per head in Payne County; very light in Tulsa and Muskogee Counties. (Okla. Coop. Sur.).

FALL ARMYWORM (Spodoptera frugiperda) - NEBRASKA - Third instar to full-grown larvae heavy on 65 percent of plants in late-planted sweet corn in Lancaster County. (Keith).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - NEBRASKA - Larva on corn at Mead Experiment Station in Saunders County August 25 for a new county record. (Raun).

CORN ROOTWORMS (Diabrotica spp.) - WISCONSIN - D. longicornis adults still prevalent on corn in State; still feeding on corn tips. (Wis. Ins. Sur., Sept. 13). COLORADO - D. virgifera adults still active, 0-4 per plant, on corn in Weld County. (Johnson).

SORGHUM MIDGE (Contarinia sorghicola) - MISSISSIPPI - Moderate on grain sorghum in Noxubee County; controls applied. (Dinkins). OKLAHOMA - Damaged 15 percent of heads in grain sorghum checked in Payne County. (Okla. Coop. Sur.).

SMALL GRAINS

HESSIAN FLY (Mayetiola destructor) - KANSAS - Survey completed August 30 in total of 366 wheatfields throughout State. Percent of fields and stems (average) infested by district: Northeast, 7 and 1.3; east-central, 12 and 0.5; southeast, 9.5 and 0.2; north-central, 29.5 and 2.9; central, 5 and 9.5; south-central, 7.6 and 0.3; northwest, 30 and 2.0; west-central, 8.3 and 0.2; southwest, 11 and 0.4. Substantial decrease noted in some districts compared with 1967. Bushel loss estimates by district: Northeast 15,700; east-central 7,960; southeast 6,910; north-central 162,720; central 36,760; south-central 79,040; northwest 97,120; west-central 12,870; southwest 43,400. Total loss for State, 462,480 bushels. (Somsen).

PALE WESTERN CUTWORM (Agrotis orthogonia) - NEBRASKA - Adult flights heavy in panhandle area. Damaging larval populations possible in wheat in spring of 1969. (Pruess).

A CRABMID MOTH (Chilo loftini) - ARIZONA - Buildup begun in millet in Salt River Valley, Maricopa County; damage may be severe. (Ariz. Coop. Sur.).

TURF, PASTURES, RANGELAND

A CRICKET (Anurogryllus muticus) - MARYLAND - Heavy in home lawn near California, St. Marys County, September 14. Collected by R. Letcher. Determined by A.B. Gurney. This is a new county record. (U. Md., Ent. Dept.).

SOUTHERN CHINCH BUG (Blissus insularis) - TEXAS - Heavy on St. Augustine grass at Paris, Lamar County. (Ware).

A BURROWING STINK BUG (Pangaeus bilineatus) - TEXAS - Damaging roots of St. Augustine grass at Corpus Christi, Nueces County. (Noland).

MEALYBUGS (Heterococcus spp.) - ARIZONA - Damaged Bermuda grass seed fields at Yuma, Yuma County; treatments applied to many fields. (Ariz. Coop. Sur.).

A LEAF ROLLER MOTH (Synnoma lynosyrana) - NEVADA - Larvae very heavy on rabbitbrush in railroad pass area on Eureka and White Pine County line. All branches on numerous plants webbed; defoliation heavy. (Bechtel, Martinelli).

BERMUDAGRASS MITE (Aceria neocynodonis) - CALIFORNIA - Heavy on Bermuda grass in Pleasanton, Alameda County. (Cal. Coop. Rpt.).

FORAGE LEGUMES

GREEN CLOVERWORM (Plathypena scabra) - MISSOURI - Larvae averaged 60-75 per 10 sweeps in alfalfa in south-central area. Some spring-seeded fields completely defoliated; controls being applied. (Huggans, Munson). KANSAS - Light, 2-6 per 10 sweeps, in most alfalfa examined in southeast district; averaged 50-65 per 10 sweeps in Linn County field. (Simpson).

WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) - NEVADA - Larvae numerous in many alfalfa fields in Smith and Mason Valleys, Lyon County. Some damage in several fields; little additional damage expected since hay ready to cut. (Batchelder).

BEEET ARMYWORM (Spodoptera exigua) - ARIZONA - All instars active in alfalfa, averaged 105 per 100 sweeps in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Larvae 50 per 100 sweeps in alfalfa at Casa Grande, Pinal County. (Ariz. Coop. Sur.).

NOCTUID MOTHS - WISCONSIN - Spaelotis clandestina, Feltia ducens, F. herilis, Agrotis gladiaria, A. venerabilis, and Euxoa scandens moths numerous in black-light trap at Hancock, Waushara County. This is one of areas with high cutworm infestation in alfalfa past spring. (Wis. Ins. Sur.).

ALFALF CATERPILLAR (Colias eurytheme) - ARIZONA - Heavy flights noted in many alfalfa fields in Pinal and Maricopa Counties. Larvae averaged 18 per 100 sweeps in alfalfa on east side of Maricopa County. (Ariz. Coop. Sur.).

ALFALFA WEEVIL (Hypera postica) - WISCONSIN - Larva collected September 5 in northern Dane County; other larvae collected in Kenosha County. (Wis. Ins. Sur.). SOUTH DAKOTA - Negative in limited survey of alfalfa near Spearfish, Lawrence County. (Jones, Newlon).

CLOVER LEAF WEEVIL (Hypera punctata) - WISCONSIN - Adults more common on alfalfa. Averaged 3 per 50 sweeps in Sauk County; less common in Kenosha, Washington, Dane, and Columbia Counties. (Wis. Ins. Sur., Sept. 13).

CLOVER ROOT CURCULIO (Sitona hispidulus) - MISSOURI - Averaged 10 per 10 sweeps in clover field in Osage County. (Huggans).

CORN ROOTWORMS (Diabrotica spp.) - WISCONSIN - Few D. virgifera taken in alfalfa in State as of September 13. D. longicornis adults currently prevalent on alfalfa near corn in State; up to 5 adults per sweep on some alfalfa. (Wis. Ins. Sur.).

BLACK BLISTER BEETLE (Epicauta pennsylvanica) - COLORADO - Adults ranged 0-80 per 100 sweeps on alfalfa in Weld County. (Johnson).

PEA APHID (Acyrtosiphon pisum) - ARIZONA - Averaged 1,500 per 100 sweeps in 160 acres of alfalfa at Bonita, Cochise County. (Ariz. Coop. Sur.). COLORADO - Increased to 2,000-4,000 per 100 sweeps on alfalfa in Weld County. (Johnson). KANSAS - Negative in alfalfa examined in southeast district. Trace numbers, 5-15 per 10 sweeps, in alfalfa in Linn and Miami Counties. (Simpson).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Average per 100 sweeps in alfalfa by county: Cochise, 175 at San Simon; Pinal, 400 at Casa Grande; Maricopa, 225 in Salt River Valley; Yuma, 450 at Yuma. (Ariz. Coop. Sur.). OKLAHOMA - Mostly adults ranged 5-8 per 10 sweeps on alfalfa in Tulsa, Wagoner, and Le Flore Counties. (Okla. Coop. Sur.).

CITRUS MEALYBUG (Planococcus citri) - ARIZONA - Light on experimental greenhouse alfalfa at Tucson, Pima County, August 7. Determined by R.F. Wilkey. This is first established infestation reported from Pima County. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - ARIZONA - Average per 100 sweeps in alfalfa by county: Yuma, 200 at Yuma; Maricopa, 45 in Salt River Valley; Pinal, 50 at Casa Grande; Cochise, 75 at San Simon. (Ariz. Coop. Sur.).

WESTERN FLOWER THRIPS (Frankliniella occidentalis) - ARIZONA - Averaged 500 per 100 sweeps in alfalfa at San Simon, Cochise County. (Ariz. Coop. Sur.).

SOYBEANS

BEAN LEAF BEETLE (Cerotoma trifurcata) - OKLAHOMA - Ranged 2-25 per 25 sweeps in Wagoner, Muskogee, Haskell, Sequoyah, Tulsa, and Le Flore Counties. (Okla. Coop. Sur.). KANSAS - Averaged 8-25 per 10 sweeps in soybeans examined in southeast district. (Simpson). MISSOURI - Averaged 1-2 per row foot in southwest area; some light pod feeding. (Craig, Thomas). VIRGINIA - Adults damaged up to 40 percent of newly formed pods in 20-acre field in Nottoway County; adults 250 per 100 sweeps in field. (Allen).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - VIRGINIA - Generally light in Sussex, Southampton, Nansemond, Isle of Wight, and Prince George Counties; occasionally severe in these counties. (Allen). SOUTH CAROLINA - Present but noneconomic in most counties. (Thomas, Sept. 18).

SOUTHERN CORN ROOTWORM (*Diabrotica undecimpunctata howardi*) - VIRGINIA - Adults 200 per 100 sweeps in Nottoway County; foliar damage moderate. (Allen).

GREEN CLOVERWORM (*Plathypena scabra*) - TENNESSEE - Infestations general in Haywood County. Leaf damage light to heavy; small pod damage light. (White). MISSOURI - Only occasional live larvae in southwest area. Larvae killed by fungus disease ranged 0-4 per square foot on ground. (Craig, Thomas). KANSAS - Light, 2-8 per 10 sweeps, in southeast and east-central districts; defoliation 20-35 percent in many fields. (Simpson).

CABBAGE LOOPER (*Trichoplusia ni*) - ARKANSAS - Mostly this species very numerous at Parkin, Cross County. Collections estimated at 3,500 September 17 and 3,000 September 18 in blacklight trap. (Wylie). About 150 moths taken per week in light trap at Kelso, Desha County, past 2 weeks. Increased daily from 26 to 241 at Kelso September 12-18 for total of 692. (Boyer).

GREEN STINK BUG (*Acrosternum hilare*) - MISSOURI - Ranged 5-40 per 30 feet of row in southwest area; highest counts in 20-40 marginal rows. (Craig, Thomas).

PEANUTS

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - VIRGINIA - Larvae severe in spotted locations in Southampton County. Infested 50 percent of vines in some fields. Infestation normally correlated with drought. (Smith).

COTTON

BOLL WEEVIL (*Anthonomus grandis*) - ALABAMA - Infestations continue heavy throughout northern area. Heavy buildup resulted from recent "hatchout" in Jackson County. Much control still in progress although some harvest taking place in northern area. (Richardson et al.). MISSISSIPPI - Infestations still high in some Yazoo County fields; punctured almost all squares and many young bolls. Controls still being applied in some late cotton fields. (Dinkins). OKLAHOMA - Punctured squares averaged 50 percent in Jefferson County and 5 percent in Wagoner County. Moderate in Washita County. (Okla. Coop. Sur.). TEXAS - Medium and widespread in Hall, Jones, and Wichita Counties. Heavy in scattered Wilbarger County fields and in Taylor County field. (Boring). For Boll Weevil in other areas see page 926.

BOLLWORMS (*Heliothis* spp.) - MISSISSIPPI - *H. zea* and *H. virescens* still active in many fields throughout delta; mostly third and later instars noted. Some young bolls damaged in late fields. (Dinkins). ARKANSAS - Of additional larvae collected in Jefferson County in August, 296 determined *H. zea* and 7 *H. virescens*. Total for season: 531 *H. zea* and 18 *H. virescens*. (Boyer). OKLAHOMA - *H. virescens* 75 percent of larvae checked at Chickasha, Grady County, and 60 percent at Newcastle, McClain County. *H. zea* egg and young larval infestations averaged 20 percent in Jefferson County; egg infestations averaged 50 percent in Wagoner County. Moderate in Washita County. (Okla. Coop. Sur.). TEXAS - *H. zea* medium in Wichita County. (Boring).

CABBAGE LOOPER (*Trichoplusia ni*) - ARIZONA - Increasing despite treatments for pink bollworm and cotton leaf perforator at Yuma, Yuma County. (Ariz. Coop. Sur.). OKLAHOMA - Damage light to moderate in Jackson County. (Okla. Coop. Sur.).

A NOCTUID MOTH (*Pseudoplusia includens*) - TEXAS - Widespread and heavy in Eagle Pass and Crystal City area of Maverick and Zavala Counties; larvae 2-5 per infested leaf in some fields. (Tapscott).

COTTON LEAF PERFORATOR (*Bucculatrix thurberiella*) - ARIZONA - Some controls applied on third day between pink bollworm weekly applications at Yuma, Yuma County. Leaf damage heavy in much of Maricopa and Pinal Counties; some fields almost completely defoliated. Heavy flights caused alarm to some homeowners at Yuma. (Ariz. Coop. Sur.).

WHITEFLIES (*Trialeurodes* spp.) - TEXAS - *T. vaporariorum* heavy in Bowie County; honeydew excessive in many fields. (Turney, Lynch). ARIZONA - All stages of *T. abutilonea* heavy on foliage in few fields on west side of Maricopa County. (Ariz. Coop. Sur.).

SUGARBEETS

BELT ARMYWORM (*Spodoptera exigua*) - ARIZONA - Increasing in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

POTATOES, TOMATOES, PEPPERS

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - ALABAMA - Larvae becoming problem in most pimento pepper fields in De Kalb and other Sand Mountain counties. Larvae averaged 1 per plant in 14-acre pimento pepper field in De Kalb County. Pepper loss considerable. Additional loss will occur as rot increases due to accelerated fungus growth during wet weather. Lighter but widespread damage noted in 15 other fields inspected recently. (Parker et al.).

TOMATO FRUITWORM (*Heliothis zea*) - VIRGINIA - Moths numerous in Accomack County; egg laying in progress on various hosts. Special problem on fall tomatoes. (Hofmaster).

MELON APHID (*Aphis gossypii*) - ALABAMA - Probably this species very heavy on treated 3 to 4-acre pimento pepper field in De Kalb County. Honeydew and sooty mold covered leaves. (Smith, Parker).

BEANS AND PEAS

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - ALABAMA - Heavy in commercial table pea plantings in 4-acre Coffee County field and in Blount County field. Numerous plants reaching production size dying due to larvae girdling plants and entering main stems. (Balch et al.).

COLE CROPS

CABBAGE LOOPER (*Trichoplusia ni*) - ARIZONA - Increasing in cauliflower, broccoli, and cabbage in Salt River Valley; Maricopa County; controls in progress. Heavy flights caused alarm to some homeowners at Yuma, Yuma County. (Ariz. Coop. Sur.). WISCONSIN - Continues numerous on cabbage in State. (Wis. Ins. Sur.). MICHIGAN - Damage continues; some crops lost. Additional control necessary in some fields. Control generally unsuccessful. (Janes, Sept. 16). VIRGINIA - Naturally occurring nuclear polyhedrosis virus appearing in early September greatly decreased larval populations in Accomack County. Occasional moths taken in Painter light trap past week. (Hofmaster).

CABBAGE MAGGOT (*Hyalemya brassicae*) - WISCONSIN - Larvae found in culls in cabbage field in Kenosha County. Larvae infested heads and probably lower leaves of sound heads in commercial fields. Some growers concerned about probable contamination problem. (Wis. Ins. Sur., Sept. 13).

CABBAGE APHID (*Brevicoryne brassicae*) - WISCONSIN - Scarce in most commercial cabbage in Kenosha County; moderate in one planting in Washington County. (Wis. Ins. Sur., Sept. 13).

CUCURBITS

SQUASH BUG (*Anasa tristis*) - OKLAHOMA - All stages heavy on watermelon checked in Payne County. (Okla. Coop. Sur.).

GENERAL VEGETABLES

CABBAGE LOOPER (*Trichoplusia ni*) - ARIZONA - Heavy in lettuce field in Pinal County. Major problem in lettuce at Yuma, Yuma County. Eggs averaged 5 per young plant in most lettuce in Maricopa County. Treatments made in all fields statewide. Larvae averaged 40 per 100 sweeps in 80-acre sweetpotato field in Litchfield area, Maricopa County. (Ariz. Coop. Sur.).

SOUTHERN POTATO WIREWORM (*Conoderus falli*) - SOUTH CAROLINA - Collected 4,890 adults week ending September 8 compared with 1,140 and 1,504 for weeks ending August 25 and 18, respectively, at Charleston, Charleston County. (Cuthbert).

SLUGS - WISCONSIN - Continue on vegetables in State; problem in gardens in Walworth, Vilas, Brown, and Sauk Counties. (Wis. Ins. Sur., Sept. 13). OREGON - *Deroceras reticulatum* buildup heavy in Willamette Valley due to abnormally high rainfall. (Crowell).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (*Carpocapsa pomonella*) - INDIANA - Adults in field decreasing at Vincennes. Collected 132 males in 30 sex lure traps compared with 151 previous week. (Wong, Sept. 16). OKLAHOMA - Larvae in 10 percent of apples checked at Perkins, Payne County. (Okla. Coop. Sur.).

ORIENTAL FRUIT MOTH (*Grapholitha molesta*) - INDIANA - Adult captures (515) similar to last week at Vincennes. (Wong, Sept. 16). OKLAHOMA - Larvae in 10 percent of peaches checked at Perkins, Payne County. (Okla. Coop. Sur.).

A SATURNIID MOTH (*Pseudohazis eglanterina*) - OREGON - Heavy flight along Columbia River near The Dalles, Wasco County, week of September 6. (Westcott).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - INDIANA - Male captures decreased slightly from 619 to 529 at Vincennes. (Wong, Sept. 16).

LESSER PEACH TREE BORER (*Synanthedon pictipes*) - INDIANA - Trapped 170 males compared with 266 last period at Vincennes. (Wong, Sept. 16).

APPLE MAGGOT (*Rhagoletis pomonella*) - RHODE ISLAND - Larvae numerous in poorly sprayed and unsprayed apple orchards in State. (Field, Sept. 10). INDIANA - Trapped 256 adults on stickyboard traps compared with 85 previous period at Vincennes. (Wong, Sept. 16).

WALNUT HUSK FLY (*Rhagoletis completa*) - OREGON - Second peak adult emergence reached September 7-13 at The Dalles, Wasco County; averaged 140 per trap in 6 traps for week. Several walnut trees completely infested. Earlier peak averaged 30 per trap in same location August 17-23. (Larson).

PEAR-SLUG (*Caliroa cerasi*) - UTAH - Severely skeletonized many cherry trees in Provo Bench and Orem area of Utah County. (Thornley, Sept. 18).

EUROPEAN RED MITE (*Panonychus ulmi*) - INDIANA - Gradual decline in most apple orchards at Vincennes due to oviposition of overwintering eggs and more predacious mites. (Wong, Sept. 16). RHODE ISLAND - Decreasing in Washington County orchards. (Field, Sept. 18).

CITRUS

CALIFORNIA RED SCALE (Aonidiella aurantii) - ARIZONA - Infestations totaled 46 in older residential area of Tucson, Pima County. Survey continues. (Ariz. Coop. Sur.).

CITRUS THRIPS (Scirtothrips citri) - ARIZONA - Nurseries and young groves treated for protection of buds and young growth in Yuma and Maricopa Counties. (Ariz. Coop. Sur.).

CITRUS FLAT MITE (Brevipalpus lewisi) - ARIZONA - Heavy, spotted infestations at Yuma, Yuma County. (Ariz. Coop. Sur.).

SMALL FRUITS

RASPBERRY CROWN BORER (Bembecia marginata) - ARKANSAS - Adults on blackberry in Washington County for a new county record. (Wyllie).

ORNAMENTALS

OLIVE SCALE (Parlatoria oleae) - CALIFORNIA - Heavy on California privet nursery stock at Sacramento, Sacramento County. (Cal. Coop. Rpt.).

A SOFT SCALE (Coccus elongatus) - FLORIDA - Severe on all 1,500 croton plants inspected September 12. (Ware, Griffith).

CITRUS MEALYBUG (Planococcus citri) - CALIFORNIA - Heavy on fuchsia nursery stock at Sacramento, Sacramento County. (Cal. Coop. Rpt.).

FOREST AND SHADE TREES

BLACK TURPENTINE BEETLE (Dendroctonus terebrans) - ALABAMA - Several infestations on 30 to 60-foot pines in Auburn and Opelika, Lee County; groups of 2-5 trees per infestation. Much of cambium layer cut. Controls being applied. (McQueen).

PINE WEBWORM (Tetralopha robustella) - MARYLAND - Injury moderate in Virginia pine planting near Monkton, Baltimore County. (U. Md., Ent. Dept.).

EASTERN SPRUCE GALL APHID (Adelges abietis) - WISCONSIN - Began emergence by September 6. All galls opened in Dane and Jefferson Counties. Most in wing pad stage; all became winged in few days. Dispersal was rapid. (Wis. Ins. Sur.).

RHODE ISLAND - Adults flying in Washington County. (Field, Sept. 10).

A CECIDOMYIID MIDGE (Cecidomyia sp.) - COLORADO - Heavy on pinyon pine in shelter belt in Washington County. (Pilcher).

BRONZE BIRCH BORER (Agrilus anxius) - WISCONSIN - Based on dead or dying white birch trees in southern area, numbers more abundant than normal. (Wis. Ins. Sur.). OHIO - Damage more common than usual on birch in central area in 1968. Many partially killed trees in Delaware and Franklin Counties as of September 11; larvae under bark. (Galford).

CHRYSMELID BEETLES - VIRGINIA - Xenochalepus dorsalis adults feeding on black locust foliage and larvae mining leaves in Montgomery County. Determined by M. Kosztarab and W.A. Allen. (Allen). RHODE ISLAND - Plagiodera versicolora numerous on willow. (Field, Sept. 11).

MIMOSA WEBWORM (Homadaula anisocentra) - OKLAHOMA - Leaf damage to mimosa ranged as follows: Muskogee, Muskogee County, 20-40 percent on 4 trees; Stigler, Haskell

County, 10-70 percent on 10 trees; Sallisaw, Sequoyah County, 10-90 percent on 10 trees; Tahlequah, Cherokee County, 10-50 percent on 8 trees; Spiro, Le Flore County, 30-90 percent on 6 trees. (Okla. Coop. Sur.).

FALL WEBWORM (Hyphantria cunea) - WISCONSIN - Third instar to full-grown larvae in Rock County September 10; many pupated. (Wis. Ins. Sur., Sept. 13). OHIO - Larvae continue feeding on various deciduous trees through most of eastern area. (Rose).

MAN AND ANIMALS

MOSQUITOES - UTAH - Annoyance reduced but still exists despite cooler weather in communities of Box Elder, Davis, Millard, and Cache Counties. (Knowlton, Sept. 18). MINNESOTA - Generally light in light traps September 7-13; of 1,078 females, Aedes vexans 610 and Culiseta morsitans 213. A. vexans predominant in larval and bite collections. As of September 17, two egg samples showed 30 and 33 percent hatch (slight increase) in laboratory; week of warm, sunny weather preceded taking of samples. (Minn. Ins. Rpt.). WISCONSIN - Adult activity resurged in several areas. A. dorsalis biting in late afternoon on eastern side of Madison. (Wis. Ins. Sur.).

SCREW-WORM (Cochliomyia hominivorax) - Total of 378 cases reported in U.S. September 15-21 as follows: TEXAS - Atascosa 7, Bandera 1, Bee 3, Bexar 1, Brewster 10, Brooks 18, Cameron 2, Comal 1, Coke 1, Crockett 9, De Witt 4, Dimmit 5, Duval 1, Edwards 12, Garza 1, Gillespie 2, Goliad 3, Hidalgo 8, Irion 1, Jeff Davis 30, Jim Hogg 4, Jim Wells 1, Karnes 5, Kenedy 4, Kerr 1, Kimble 2, Kinney 10, Kleberg 1, Mason 2, Maverick 10, Medina 2, Menard 1, Nueces 2, Pecos 58, Presidio 6, Real 2, Reeves 8, Refugio 20, San Patricio 2, Starr 2, Sutton 2, Terrell 39, Tom Green 1, Uvalde 3, Val Verde 30, Victoria 2, Webb 2, Willacy 1, Wilson 3, Winkler 1, Zapata 1, Zavala 3; ARIZONA - Cochise 3, Graham 2, Maricopa 1, Mohave 2, Pima 1, Pinal 2, Santa Cruz 1, Yavapai 4; NEW MEXICO - Catron 1, Eddy 2, Grant 1, Hidalgo 1, Otero 2, Lea 1; CALIFORNIA - San Diego 3. Total of 839 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Territorio sur de Baja California 64, Sonora 230, Chihuahua 236, Coahuila 238, Nuevo-Leon 52, Tamaulipas 19. Total of 60 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 102,018,000; New Mexico 3,020,000; Arizona 11,160,000; California 900,000; Mexico 82,510,000. (Anim. Health Div.).

FACE FLY (Musca autumnalis) - TENNESSEE - Collected in Decatur County for new county record. Determined by H. Williams. (Williams, Quillin). WISCONSIN - In Clark and Calumet Counties. (Wis. Ins. Sur., Sept. 13). Clark County is a new county record. (PPC). UTAH - Still annoyed horses and cattle in northern area. (Knowlton, Sept. 18).

STABLE FLY (Stomoxys calcitrans) - WISCONSIN - Increased; severe in Columbia, Clark, Jefferson, and Calumet Counties but moderate in Trempealeau and Winnebago Counties. (Wis. Ins. Sur., Sept. 13).

HORN FLY (Haematobia irritans) - OKLAHOMA - Ranged 600-1,000 per head on cattle in Major County. Counts per head averaged 1,450 on yearlings and 750 on cows in Payne and Noble Counties. Heavy in Mayes County. Moderate in Cleveland County. (Okla. Coop. Sur.).

A LOUSE FLY (Lipoptena mazamae) - OKLAHOMA - Ranged 2,000-3,000 per head on deer checked in Cherokee and Muskogee Counties. (Okla. Coop. Sur.).

GIANT HORNET (Vespa crabro germana) - INDIANA - Four adults collected in black-light trap at Bedford, Lawrence County. This is a new county record. (Huber).

HARD-BACKED TICKS - TEXAS - Dermacentor variabilis light on cattle near Carrizo Springs, Dimmit County. (Dodgen). OKLAHOMA - Amblyomma americanum larvae and

nymphs decreased on deer in Cherokee and Muskogee Counties. First Ixodes scapularis adults on deer. (Okla. Coop. Sur.).

HOUSEHOLDS AND STRUCTURES

ELM LEAF BEETLE (Pyrrhalta luteola) - CALIFORNIA - Medium nuisance in residences and yards locally in North Highlands, Sacramento County; adults migrating earlier this year. (Cal. Coop. Rpt.).

FIELD CRICKETS (Gryllus spp.) - ARIZONA - Heavy numbers annoying homeowners at Buckeye, Maricopa County. (Ariz. Coop. Sur.).

STORED PRODUCTS

TOBACCO MOTH (Ephestia elutella) - SOUTH CAROLINA - Infesting tobacco in pack-houses in Marion County. Expected to increase in tobacco areas because amount of tobacco stored on farms greater than in past. (Nettles, Sept. 18).

ALMOND MOTH (Cadra cautella) - TEXAS - Infested clover seed at Crockett, Houston County. (Percival).

GRAIN MITE (Acarus siro) - MARYLAND - Extremely heavy in dairy feed supply near Westminster, Carroll County. (U. Md., Ent. Dept.).

BENEFICIAL INSECTS

A TEPHRITID FLY (Paracantha culta) - COLORADO - Larval infestation 100 percent in bull thistle in Weld County; destroyed 25 percent of seeds in heads. (Colo. Ins. Sur.).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Traps checked in El Paso area and south to Ruidosa. Two specimens taken from traps: One from field 8 miles south of Fabens and one from field near El Paso and Hudspeth County line. Delimiting work in these 2 fields gave negative results. One adult, one egg puncture, and 18 feeding punctures found in only one field during survey from Redford through Candelaria. Trap catches increased greatly last week of August in old control zone of High Plains area. Migrating weevils found in area around rim of Caprock, beginning in southeast corner of Dawson County, including projection of Caprock into Borden County, and extending up to rim of Caprock into Lynn County. Infestation light on about 25,000 acres. (PPC South. Reg., Aug. Rpt.). For Boll Weevil in other areas see page 921.

BOLL WEEVIL COMPLEX (Anthonomus grandis complex) - ARIZONA - Recovered 10 from 5 wing traps placed in thurberia in Molino Basin area of Catalina Mountains; weevils heavy in area now. Installed 25 wing traps in 53-acre cotton field in Avra Valley northwest of Tucson; area heavily infested last season. No weevils or feeding signs observed during August in this location. (PPC West. Reg., Aug. Rpt.).

GRASSHOPPERS - WISCONSIN - Melanoplus femurrubrum nearly all adults; most females examined contained eggs. Populations variable but not startling. (Wis. Ins. Sur., Sept. 13). WYOMING - Counts of 8 or more per square yard on 1,164,300 acres of rangeland during fall adult survey. Number of acres infested by county: Albany 32,000; Campbell 38,000; Converse 100,000; Crook 48,000; Fremont 101,000; Goshen 125,000; Hot Springs 41,000; Johnson 160,000; Laramie 20,000; Natrona 50,000; Niobrara 230,000; Park 30,000; Platte 72,000; Sheridan 44,800; Sublette 2,500; and Weston 70,000. (Patch).

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - ARKANSAS - Reinfested area in vicinity of nursery near El Dorado, Union County. Surveys of generally infested area in southeast Union County show buildup in Strong and Huttig area. (Shotts).

JAPANESE BEETLE (*Popillia japonica*) - MICHIGAN - Single finds made at 6 locations in Monroe County and at 4 locations in Lenawee County. Infested about 2,000 acres at Warren, Macomb County; several hundred adults collected. Infested about 4,800 acres in Berrien County; approximately 600 adults trapped. (PPC Cent. Reg., Aug. Rpt.).

MEXICAN FRUIT FLY (*Anastrepha ludens*) - CALIFORNIA - Recovered 41 sterile flies in San Diego County; had been released in Baja California, Mexico. (PPC West. Reg., Aug. Rpt.).

MORMON CRICKET (*Anabrus simplex*) - UTAH - Light in areas with past history of severe outbreaks. (PPC West. Reg., Aug. Rpt.).

PINK BOLLWORM (*Pectinophora gossypiella*) - CALIFORNIA - Seasonal totals of 8,259 in Imperial Valley and 4,938 in Coachella Valley in August. Seasonal total in 5 traps increased from 29 in July to 1,872 in August at Needles; seasonal total of 85 in 1 trap at Borrego Springs, San Bernardino County. (PPC West. Reg.). Trapping continues. All green boll inspections in Imperial Valley terminated for season. Cotton bolls in Central Valley beginning to open. Total of 6,000 sterile moths released in Borrego Valley, San Diego County. Larval infestation about 23 percent. Sterile moths released in Kern County totaled 673,087; largest release up to September 20. No native moths trapped or larvae recovered to same date. (Cal. Coop. Rpt.). NEVADA - Adults increased sharply in sex lure traps. Collected 9 males September 13, 36 males September 16, and 9 males September 18 in Moapa Valley, Clark County. Collected 21 males September 11-12 in 5 fields in Pahrump Valley, Nye County, for first adults of season. (Bell, Yamashita). No larvae in bolls checked in Pahrump Valley, Nye County. (McLudden). ARIZONA - Few larvae in lint cleaners at Yuma, Yuma County. No treatments in Graham County past week. Building up northeast of Solomonville. Larvae 2 per 200 bolls in 5-acre field at San Simon, Cochise County. Situation good in Maricopa, Pima, and Pinal Counties. (Ariz. Coop. Sur.). TEXAS - Very light in most areas during inspections in August. About 12,000 acres of stalks destroyed in Harlingen district. (PPC South. Reg.).

RANGE CATERPILLAR (*Hemileuca oliviae*) - NEW MEXICO - Observations made in Colfax, Harding, and Union Counties. Found in Colfax County west of treated areas. No heavy infestations observed. Very few infestations reported within treated areas in these 3 counties. Small infestation reported on ranch east of Raton, immediately north of treated area. Infestations reported near Tecolote, south of Corona, to be checked. (PPC West. Reg., Aug. Rpt.).

A SEED CHALCID (*Megastigmus pistaciae*) - CALIFORNIA - Preliminary results of chalcid control on pistachio trees in Plant Introduction Gardens, Chico, Butte County, indicate good control. Flotation of pistachio seed and nut varieties, with and without hulls, shows that virtually all firm full nuts sink in water. Lack of infested nuts this season precludes development of useful inspection technique by flotation. No larvae were found in nuts taken from trees that had 37 percent infestation in 1967 and were treated in 1968. One larva was found in about 150 nuts from two control trees. (Cal. Coop. Rpt.).

WHITE-FRINGED BEETLES (*Graphognathus* spp.) - GEORGIA - New infestations found in Decatur, Fulton, Miller, Stewart, Thomas, and Worth Counties; extensions noted in Carroll, Coffee, Colquitt, Grady, Lowndes, Seminole, Toombs, Turner, Wilcox, and Worth Counties. (PPC South. Reg., Aug. Rpt.).

HAWAII INSECT REPORT

Turf, Pasture - Larvae of a GRASS WEBWORM (Herpetogramma licarsialis) light to moderate (32 per square foot) in Kikuyu grass pasture at ranch on Hawaii Island, at 800 feet elevation. Eucelatoria armigera (a tachina fly) averaged 6 and Casinaria infesta (an ichneumon wasp) averaged 2 per 10 sweeps in pasture. (Yoshioka).

General Vegetables - All stages of BEAN FLY (Melanagromyza phaseoli) heavy on snap beans in Waikapu, Maui, at 500 feet elevation. Damage about 33 percent on young bean plants in small backyard planting. (Ah Sam, Miyahira). GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) adults medium on snap beans in Omaopio and Pulehu, Maui, at 2,200-2,400 feet elevation. Larvae and adults of LEAF MINER FLIES (Liriomyza spp.) and CHINESE ROSE BEETLE (Adoretus sinicus) heavy on snap beans at Pulehu, Maui; adults heavy at Omaopio. A. sinicus damage light on snap beans at Omaopio. (Miyahira).

Ornamentals - ORCHID WEEVIL (Orchidophilus aterrimus) adults caused noticeable damage on vanda orchid blossoms at Hilo, Hawaii Island. Weevils readily detected on stems and blossoms. (Yoshioka).

Forest and Shade Trees - GREENHOUSE THRIPS (Heliethrips haemorrhoidalis) adult feeding damage light on Monterey pine needles at Kaaweiki Ridge at Kokee, Kauai, at 3,500 feet elevation. First record of thrips damage to this host on Kauai. Heavy damage previously noted on Monterey pine on Molokai in July 1962. (Hobby, Sugawa). FULLER ROSE WEEVIL (Pantomorus cervinus) adult foliar damage moderate to heavy on Scaevola sp. (a forest shrub) in same area of Kauai. Damage light to loblolly pine needles and moderately heavy to juvenile and mature leaf growth of Acacia koa saplings. (Davis et al.).

Beneficial Insects - A PTEROMALID WASP (Halticoptera patellana) reared from Melanagromyza phaseoli (bean fly) in young snap bean plants collected at Waiahole, Oahu, in July 1968. This is first record of a parasite on M. phaseoli. Determined by C. Yoshimoto. H. patellana reared previously from undetermined leaf miner flies collected on cabbage, peanut, and onion foliage. (Chong). EUPATORIUM GALL FLY (Procecidochares utilis) larvae and galls heavy on pamakani in Auwahi, Maui, at 4,000-5,000 feet elevation. Area cleared 2 years ago; very light on first year's regrowth. Apparently very active last 6 months. (Miyahira, Tamura). LANTANA HISPID (Uroplata girardi) larvae and adults heavy on 40 acres of lantana in Ulupalakua, Maui, at 2,000 feet elevation. Mines and adults more abundant than in past years. (Ah Sam, Miyahira). MELASTOMA BORER (Selca brunella) larvae moderate on fruits of Melastoma malabathricum (a noxious weed) at Kilohana, Kauai, at 1,000 feet elevation. Of 50 fruits randomly collected, 27 (54 percent) were infested and severely damaged. Adults and eggs of a PLATASPID BUG (Coptosoma xanthogramma) abundant on sesbania at Poipu, Kauai. Of 358 eggs collected in 5 minutes, 266 (74.3 percent) parasitized by Trissolcus sp. (a scelionid wasp). (Davis, Sugawa).

INSECT DETECTION

New County Records

SPOTTED ALFALFA APHID (Therioaphis maculata) - SOUTH DAKOTA - Edmunds, Hyde, and Faulk Counties. (p. 917).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - NEBRASKA - Saunders County. (p. 918).

A CRICKET (Anurogryllus muticus) - MARYLAND - St. Marys County. (p. 919).

RASPBERRY CROWN BORER (Bembecia marginata) - ARKANSAS - Washington County. (p. 924).

FACE FLY (Musca autumnalis) - TENNESSEE - Decatur County. WISCONSIN - Clark County. (p. 925).

GIANT HORNET (Vespa crabro germana) - INDIANA - Lawrence County. (p. 925).

LIGHT TRAP COLLECTIONS

KANSAS - Garden City - 9/14-18, BL - Army cutworm (Chorizagrotis auxiliaris) 120, armyworm (Pseudaletia unipuncta) 35, black cutworm (Agrotis ipsilon) 173, corn earworm (Heliothis zea) 194, variegated cutworm (Peridroma saucia) 2, wheat head armyworm (Paronta diffusa) 13, yellow-striped armyworm (Prodenia ornithogalli) 18. Tribune - 9/17, BL - Army cutworm 3, corn earworm 1, wheat head armyworm 1. MISSISSIPPI - Stoneville - 9/14-20, 2BL, 54-88°F., precip. 3.44 - Armyworm 343, beet armyworm (Spodoptera exigua) 81, black cutworm 29, cabbage looper (Trichoplusia ni) 467, corn earworm 521, fall armyworm (S. frugiperda) 99, granulate cutworm (Feltia subterranea) 66, salt-marsh caterpillar (Estigmene acrea) 50, tobacco budworm (H. virescens) 21, tobacco hornworm (Manduca sexta) 17, tomato hornworm (M. quinquemaculata) 1, variegated cutworm 4, yellow-striped armyworm 605. MISSOURI - Fair Grove - 9/12-18 - Armyworm 91, black cutworm 6, corn earworm 183, European corn borer (Ostrinia nubilalis) 91, fall armyworm (Spodoptera frugiperda) 158, variegated cutworm 4, yellow-striped armyworm 40. Portageville - 9/14-20 - Armyworm 7, black cutworm 1, corn earworm 69, European corn borer 40, tobacco budworm 2, yellow-striped armyworm 3. NEW JERSEY - Aura - 9/11-18, BL - Armyworm 38, black cutworm 15, fall armyworm 3, hornworms (Manduca spp.) 1, variegated cutworm 2, yellow-striped armyworm 21. Evesboro - 9/11-18, BL - Armyworm 5, black cutworm 4, corn earworm 1, fall armyworm 4, hornworms (Manduca spp.) 1, variegated cutworm (Peridroma saucia) 2, yellow-striped armyworm 2. Plainsboro - 9/11-18, BL - Armyworm 7, black cutworm 6, cabbage looper 2, fall armyworm 3, hornworms (Manduca spp.) 3, variegated cutworm 9, yellow-striped armyworm 3. Seabrook - 9/11-18, BL - Armyworm 8, black cutworm 15, cabbage looper 2, corn earworm 1, European corn borer 7, fall armyworm 4, variegated cutworm 13, yellow-striped armyworm 10. OHIO - Hilliard - 9/12-18, BL - Armyworm 21, black cutworm 24, corn earworm 6, European corn borer 42, fall armyworm 4, variegated cutworm 14, wheat head armyworm 6, yellow-striped armyworm 12. Wooster - 9/12-18, BL - Armyworm 104, black cutworm 15, corn earworm 10, fall armyworm 15, European corn borer 22, variegated cutworm 30, wheat head armyworm 27, yellow-striped armyworm 2. TEXAS - Waco - 9/14-20, BL - Armyworm 88, beet armyworm 182, black cutworm 22, cabbage looper 1,332, corn earworm 235, fall armyworm 1, granulate cutworm 93, salt-marsh caterpillar 1, tobacco budworm 24, variegated cutworm 25, yellow-striped armyworm 21. WISCONSIN - Madison - 9/13-18, BL - Armyworm 29, black cutworm 11, corn earworm 3, European corn borer 11, variegated cutworm 17.

THE GREENBUG IN THE ATLANTIC COAST STATES

(Schizaphis graminum (Rondani))
(Homoptera: Aphididae)

Mortimer D. Leonard^{1/}

The greenbug, for many years placed in Toxoptera, apparently was first recorded in the United States at Culpeper, Virginia, in 1882. Within the next two or three decades it became distributed throughout the country except in New York, New Jersey, Delaware, Connecticut, Rhode Island, New Hampshire, and Maine. Although early and injurious outbreaks were periodically recorded in Georgia, South Carolina, North Carolina and Virginia, the greatest injury occurred in the grain-producing States in the more central part of the country. This is still true. Wheat and oats are the principal grain crops affected. The greenbug is one of the first aphids recorded to produce widespread and injurious outbreaks in the United States.

Because a great deal more is known about the greenbug in the large grain-producing States, it seemed desirable to collect the available records for the Atlantic Coast States. Many of the records included here were published in the Insect Pest Survey Bulletin of the former U.S. Bureau of Entomology. Numerous others previously were unpublished.

The States are arranged geographically from Florida to Maine. Under each, the data on the greenbug are arranged in chronological order. Although the District of Columbia and Pennsylvania do not quite reach the Atlantic Ocean, the available records for these are included. Since the greenbug has been found in New Brunswick and Nova Scotia in eastern Canada these also are included.

Appreciative acknowledgement is made to Survey and Detection Operations, Plant Pest Control Division, Agricultural Research Service, United States Department of Agriculture for making available records from their Scientific Records System. These are indicated by "IPS" in reference to their original inclusion in the former Insect Pest Survey files and "SRS" for the present system. Thanks are also due to individuals in the several States who have supplied records, many of which were unpublished.

FLORIDA

The following records are from slides in the Florida Agricultural Experiment Station. They were kindly furnished to me by Dr. A. N. Tissot of the University of Florida (Emeritus) and determinations were made by him unless otherwise stated. Names in parentheses are those of the collectors.

Two slides presumably made by A. L. Quaintance from Lake City, May 10, 1897. Gainesville--April 23, 1914, from oats (A. C. Mason); March 17 and 31, 1921, (O. H. Beyer); March 9, 1928, on oats (Tissot). Lake Alfred--July 10, 1929, on crabgrass (W. L. Thompson). Gainesville--February 2, on wheat (W. B. Tisdale) and March 1, 1932, on wheat (Tissot); January 23, 1932, on oats (Camp and Tissot); June 23, 1939, on crabgrass, Eleusine sp. (Tissot). Paxton--November 21, 1937, on oats (Blackmon). Pensacola--October 29, 1943, on oats (J. O. Murphy). Sawdust (Gadsden County)--December 29, 1947, on oats (K. Dorward). Gainesville--January 12, 1950, on oats (L. C. Kuitert). Sarasota--March 18 (E. G. Kelsheimer) and Fort Pierce--December 26, 1952, (W. C. Genung) on Pangola grass, Digitaria

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decumbens. Belle Glade--November 2, 1953, on fescue (Genung). Kendall--December 17, 1953, on Pangola grass (D. O. Wolfenbarger). Gainesville--January 14, 1953, on oats in greenhouse (Kuitert), on oats in air-conditioned chamber May 3, 1957, (H. H. Luke), and March 11, 1957, on Pangola grass (Tissot and Kuitert).

The following are from Plant Pest Control Division records: Quincy area--November 1946, considerable damage to oats (F. S. Chamberlin, IPS). Belle Glade--December 12, 1952, severe infestation of oats for grazing (W. C. Genung, SRS). Population on oats and Pangola grass attacked excessively by hymenopterous parasites during January 1953 in the Everglades; aphids appearing again in the Everglades on Pangola grass October 29 and heavy parasitism in November. (Genung et al., summary 1953 in SRS). "Nymphs and adults have caused some apparent damage to Pangola grass . . . at the Smith Cattle Ranch, Davie, December 23. Caused a medium infestation of nymphs and adults on Pangola grass at the Imperial Ranch, Davie; and 2 to 3 nymphs and adults per plant on Pangola grass 2 miles east of Davie. No apparent damage was indicated. December 31." (H. A. Denmark, summary 1954 in SRS). "On Pangola grass pastures . . . showed an increase during the first 3 weeks of March at Everglades Experiment Station." (Genung, summary 1955 in SRS).

For 11 of the 15 years between 1949 to 1963, Dr. Tissot collected winged aphids which had been "trapped" by the sticky leaves of tobacco. This was done in Gainesville during the tobacco-growing season from April to June. The number of specimens of the greenbug by years is shown in the following table:

<u>Year</u>	<u>No.</u>	<u>Year</u>	<u>No.</u>
1949	12	1957	6
1950	7	1958	4
1951	1	1961	25
1952	1	1962	12
1953	11	1963	4
1954	2		

GEORGIA

"Found in the following counties: Tift, Charlton, Brooks, Wilcox, Richmond and Johnson on oats and wheat." (Report by M. S. Yeomans to IPS, March 7, 1929).

"Fort Valley--November 16, 1929, on oats. The infestation is unusually heavy this year and considerable damage has already been done. Deadened areas are appearing in green fields as a result of the damage by this insect." (Report by O. I. Snapp to IPS).

"During the late winter and spring an investigation was made of the unusual outbreak of the green bug or spring grain aphid, which affected oats and wheat in the Piedmont and upper Coastal Plain regions of Georgia, as well as neighboring states. Almost every farmer interviewed was entirely unfamiliar with green bug injury and this outbreak was evidently the worst ever suffered in Georgia. The insect is not new to the state, as there are records of outbreaks in several years, notably 1907 and 1914, and there was damage at Experiment in 1935.

"Injury by this insect appeared first as dead spots and streaks in the grain fields, but finally large areas or whole fields were destroyed in some cases. In some fields spots were not so evident, but plants over a wide area were thinned out. According to the records obtained, injury was first observed by grain farmers late in December of 1936 and became widespread during the following month. Injury seemed to slack during February, but continued again during March. Green bug feeding had ceased entirely by May 20 when harvest was beginning. Almost all the damage was to oats, although an occasional field of wheat was attacked.

"The survey brought out the following points as to green bug attacks on oats:

1. Oats sown before October 15, in the Piedmont region, usually had more injury than oats sown the latter part of October or early November.
2. Grain on poor land, such as in washed areas, suffered more than that on fertile land. Injury was more evident on gray, sandy land than on the heavier red soils.
3. The outbreak was caused by the unusually warm weather during the fall and winter, such weather making development of the green bug rapid. There was a small excess in temperature for the state during September and October, a small deficiency in November, and an excess again December, January and February. The warmest period began December 22 and ended January 31. This was the warmest January on record for Georgia, according to reports of the U. S. Weather Bureau, the average daily excess for the state being 11 degrees.

There was an excess in rainfall in the same months in which the temperature was high but the possible influence on insect numbers is not known.

4. Infestation of a field often started from volunteer oats.
5. Throughout the counties surveyed, no difference in injury between oat varieties was apparent though in the Agronomy plots at the Experiment Station some interesting differences of this type did show." (Georgia Agricultural Experiment Station Annual Report 1936-1937, pp. 48-50). No details are available to substantiate the outbreaks in 1907 and 1914. T. L. Bissell tells me he prepared the foregoing report on the greenbug.

Reynolds--1941, "Two reports from Reynolds (west central Georgia) of greenbug injury to oats dated January 9 and 15. Considerable patches of oats have died." (Report by T. L. Bissell to IPS).

On January 29, 1941, R. W. Harned reported as follows to IPS: "In a letter dated January 27, 1941, Dr. P. M. Gilmer, Tifton, Georgia, states that the green bug is seriously attacking winter oats throughout the State of Georgia. He has noted that the infestation is rather heavy in the vicinity of Tifton and in several other counties of Southern Georgia. He states that Mr. Parham and Mr. Turner of the Georgia Coastal Plain Experiment Station recently made a rather extended trip through the State and reported that the damage is exceptionally heavy. Dr. Gilmer states further that based on his observations of this insect in Kansas and Oklahoma he considers the infestation in Georgia rather heavy and that extensive damage will undoubtedly be caused. He has observed some fields in which all of the plants have been killed over areas as large as half an acre. In his opinion, although the damage will be serious, it will not be as great as seems to be anticipated by many of the farmers."

"There is still a small infestation of green bug, occurring sporadically on oats in Tift, Lowndes and Echols counties. There has been a build-up of parasites, such as Lysiphlebus, upon this grain aphid." (Report by P. W. Gilmer to IPS, May 3, 1941).

"There has been a mild outbreak of the greenbug on oats this winter. Reports come from Taylor County, January 9 and 15 (2 farms): Spalding County, January 31; and Pike County, February 7--Spots in fields had died out; on one farm the estimated loss was 10 percent. The parasite, Lysiphlebus testaceipes, has been at work from the first report, January 9." (Report by T. L. Bissell to IPS, February 20, 1941).

"Damage to grain by greenbugs has increased during the last two weeks, and some farmers have used airplanes to apply insecticides for control." (Report by O. I. Snapp, Fort Valley, to SRS, February 2, 1950).

"Infestations were light to moderate and well distributed over the State on small grain." (Report by W. C. Johnson, summary 1957 in SRS).

SOUTH CAROLINA

Regarding the outbreak of 1903, Webster and Phillips (p. 24) say: "This outbreak was, however, an incipient one and resulted in little injury, the seriously infested areas being confined to northern Texas, exclusive of the 'Panhandle,' with possibly the country in the then Oklahoma and Indian Territories bordering the Red River, and in South Carolina."

"North and South Carolina also suffered somewhat from the depredations of this insect in 1907. The senior author made a trip into this section reaching Sumter, S. C., April 17, 1907. He found that all fields of oats, the only grain sown, were more or less affected; here and there brown areas occurred, showing the characteristic work of Toxoptera. This condition was noticeable from Sumter, S. C., to Charlotte, N. C., indicating that the infestation was general." (Webster and Phillips, p. 36).

Recorded from Bennettsville, Hartsville, and Monetta 1903 and Batesburg 1911. (U.S. Bur. Ent. correspondence).

Columbia--April 13, 1925, on winter oats. "Infestation general but slight. Ladybird beetles and syrphids at work. No serious damage expected. Oats heading out." (Report by P. Luginbill to IPS).

Oconee County--January 10, 1927, specimens received and reported as destroying a two-acre field of oats. It possibly occurs in small numbers elsewhere in the State but has not been observed or reported. (Report by J. O. Pepper to IPS, February 21, 1927).

Florence--April 20, 1935, several outbreaks on oats; natural enemies active (report of F. Sherman and associates to IPS); spring 1935, severe outbreaks on oats and rye (coll. by C. F. Rainwater and det. by P. W. Mason); and November 16, 1948, on oats (coll. by L. C. Fife and det. by L. M. Russell). [From files, Department of Entomology, Clemson University.]

Barnwell County--1937, specimens collected on oats and rye. (Report by W. C. Nettles to IPS).

Considerable infestation and damage to early planted winter oats and wheat in eastern half of State, March 22, 1941. (Report by Nettles to IPS).

Brunson--1929, injuring oats. (Report by J. N. Tenhet in Insect Pest Survey Bul. 9(1):9, 1929).

Clemson College--April 19, 1931, on oats (coll. by Nettles and det. by A. N. Tissot); April 24, 1960, 2 *alatae* in trap light (det. by B. F. Coon). [In files, Department of Entomology, Clemson University.]

NORTH CAROLINA

Mebane, Alamance County--January 26, 1890, reported as ruining both wheat and oats. (Webster and Phillips, p. 20).

Occurred on wheat and oats in March 1907 in Franklin and Forsyth Counties and in April in Davie, Forsyth, Guilford, Union and Rowan Counties. (Report by F. Sherman to IPS).

"We received a letter with specimens from Mr. L. M. Smith, Mr. Sherman's assistant, at Newport, Carteret County, N. C., stating that he found a small field of oats in the outskirts of town that was considerably damaged by Toxoptera. This county is on the coast and Newport has an elevation of 19 feet. From this it seems that in all probability Toxoptera covered the entire State." (Webster and Phillips, p. 37). This note is in connection with the 1907 outbreak.

Chadbourn--November 19, 1929, "There is a rather wide-spread infestation of this aphid on early planted oats in this section. Some of the growers are complaining of losing their stand of plants due to this insect. The tips of the leaves are already dead on many plants and all living areas of leaves are clustered with aphids." (Report of W. A. Thomas to IPS).

Statesville--April 20, 1954, barley in the vicinity generally infested, in some fields as much as 10 percent of plants with developing colonies. Infestation south and east of Statesville less severe. Oats and wheat just becoming infested, with single adult aphids scattered through fields. (Report by T. B. Mitchell to SRS).

"Was widespread in Forsyth County on small grain in the spring and in Harnett County in the fall." (M. H. Farrier, summary 1955 in SRS).

"Negative during the 1959-60 winter. Infestation had killed 25 to 75% of some fields of oats and rye in Nash County by early December and portions of other fields were beginning to turn brown." (M. H. Farrier, summary 1960 in SRS).

In April 1968, Dr. Clyde F. Smith of the University of North Carolina sent me the records of the following collections made by him: Willard--November 29, 1943, on oats; Raleigh--February 12, 1947, on oats; Lexington and Waynesville--1958, on oats; Nashville--December 3, 1960, on oats and rye. Dr. Smith wrote, "As far as North Carolina is concerned I am sure that the greenbug is a pest throughout the State. This is especially true if warm weather continues late into the fall. Most of the damage occurs in the fall rather than in the spring of the year."

VIRGINIA

"The first examples of Toxoptera graminum to be found in America and identified as such were probably collected with the oats plants which they were destroying by Mr. H. S. Alexander, of Culpeper, Va., on June 15, 1882." The authors further state that Mr. B. F. White of Mebane, North Carolina, in a letter dated January 28, 1890, wrote that this same insect had appeared in his area in 1882, in May. They therefore concluded . . . it seems quite likely that, while the discovery was first made at Culpeper, Va., the insect occurred over a considerable area of country in Virginia, extending southward into northern North Carolina . . . " (Webster and Phillips, pp. 13 and 14).

In 1907 "The senior author also found Toxoptera in destructive abundance at Midlothian, Chesterfield County, Va., in a small meadow of orchard grass. Mr. J. L. Phillips, the State entomologist, reported a slight outbreak at Cloverdale, Botetourt County, Va., in rye, and stated that considerable damage had been done in some parts of the field." (Webster and Phillips, p. 37).

"Grain aphid - Several reports lately of damage being done in Goochland County - specimens received. Have examined fields of wheat in Shenandoah Valley Counties. Fairly abundant in early planted fields, but apparently doing no damage . . . Fields between Richmond and Scottsville along James River all more or less infested but apparently no damage." (Report by C. R. Willey to IPS, February 23, 1932).

"We have had a number of complaints about the greenbug (Toxoptera graminum Rond.) on wheat. These have come from a number of counties in each wheat growing section and from Halifax County just out of the wheat belt. The County Agents have

reported that many wheat fields have been severely damaged by the feeding of this pest." (Report by W. J. Schoene to IPS, February 22, 1932).

Augusta County--December 12, 1941, plants in one field of barley killed over an area of 50 feet long and 20 feet wide but the infestation extended only 2 or 3 feet beyond this killed area. (Report by A. M. Woodside to IPS).

New Kent or Charles City County--December 12, 1956, believed causing discoloration of oats. (Report by J. O. Rowell and det. by W. G. Evans, Office of State Entomologist).

Middlesex County, Nottoway County, Eastern Shore--December 5, 1958, attacking early barley and oats severely in the lower end of Middlesex County (report by Edwards); heavy on oats and barley on a Nottoway County farm (report by Rowell) and were heavy on small grains on the Eastern Shore during the last week of November (report by R. N. Hofmaster). [All records in the Office of State Entomologist.]

Mathews County--November 29, 1966--several barley and oat fields badly infested; farmers are considering spraying for control this week (Office of State Entomologist--report by Dinwiddie).

"Five adults collected in oatfield in Nansemond County April 30, 1968. Det. by L. M. Russell. This is first report of species in county." (W. A. Allen, U.S. Dept. Agr. Coop. Econ. Ins. Rpt. 18(26):573, 1968).

MARYLAND

"On June 7, 1884, Mr. Albert Koebele found this species infesting wheat plants at Cabin John Bridge, situated in Maryland a few miles above Washington . . ." (Webster and Phillips, p. 15).

"Damaged young orchard grass seedlings at Clarksville, Howard County." (U.S. Dept. Agr. Coop. Econ. Ins. Rpt. 8(47):953, 1958).

Killed two-thirds of an oat field in Worcester County, November 13, 1959. (U.S. Dept. Agr. Coop. Econ. Ins. Rpt. 9(48):1017, 1959).

Beltsville--October 13, 1961, *alatae* in yellow water pans among gladioli. (Coll. by H. E. Wave and det. by L. M. Russell).

DELAWARE

There are no records of the occurrence of the greenbug.

DISTRICT OF COLUMBIA

"There was an outbreak of Toxoptera in the bluegrass lawns north of the buildings of the Department of Agriculture at Washington, D.C., in July, 1907. The infested area . . . was apparently confined to the space of about an acre, where it was excessively abundant; outside of this area practically no Toxoptera could be found." In 1910 it was again injuriously abundant in this same area and was quite numerous on bluegrass about the Washington Monument some 4 blocks away. (Webster and Phillips, pp. 37-38).

Washington, D.C.--July 18, 1906, on *Poa pratensis* (T. Pergande -- one slide in USNM); April 4, 1908, no food plant given, dead when found (C. N. Ainslee -- one slide of female with one egg and young in USNM); January 1932, food plant not given (coll. by F. M. Wadley -- one slide in Cornell Univ. Collect.). June 1, 1962, on crabgrass, *Digitaria sanguinalis*, a few *alatae*, *apterae*, and nymphs

(coll. and det. by M. D. Leonard). Two alatae in a yellow water pan on the roof of an apartment house (10 stories high), 2 alatae during June 1962 (Leonard, 1964b) and 1 alata in the pan in July 1963 (Leonard, 1965).

PENNSYLVANIA

York--September 13, 1909, no plant given, 1 aptera, 5 nymphs on a slide in USNM. (Coll. by V. L. Wildermuth).

"A field of timothy near Carlisle, Pa., was found by J. S. Pinckney on May 9 to be heavily infested with Toxoptera graminum," reports Chas. C. Hill. "At this time Mr. Pinckney observed that the field was already showing all the characteristic 'spots' of this type of infestation, scattered throughout the field and varying in size from a few feet in diameter to 20 yards. The field has now been entirely ruined from this cause and will be plowed up. It is unusual to find serious infestation from this species of aphid in this section of the country, and F. M. Wadley believes that it has never before been reported as working on timothy in injurious abundance. These aphids were plentiful in near-by oat and timothy fields but were not doing any outstanding injury to them. The determination of the species was verified by F. M. Wadley." (Mo. Letter, U.S. Bur. Ent., No. 218 for May, dated June 1932).

Springbrook (near Moussie between Scranton and Pittston)--1 alata, June 13, 1945. (Coll. by R. I. Sailer -- 1 slide in USNM).

Centre Hall--in black light traps and in yellow trays alatae as follows: May 11 and 27, June 2, 22 and 29, 1958; July 2 and 6, August 24 and 31, 1960. One to 3 alatae collected on each of the above dates. (Report from J. O. Pepper). Dr. B. F. Coon (1968), Pennsylvania State University, operated two black light traps from May 1 through November 26, 1960. In these a total of 213 alate greenbugs were taken nearly all of which (194) were in June. The other dates of collections were May - 3 alatae; July - 5 alatae; August - 1 alata; and October - 1 alata.

NEW JERSEY

No locality given (1961)--October 6 - 1 alata; October 9 - 1 alata; and November 6 - 2 alatae collected by sweeping, no host plant given. (Coll. by R. S. Filmer and det. by J. O. Pepper).

Cranbury--June 2, 1960, on timothy grass. (Coll. by H. E. Wave and det. by C. F. Smith). See Leonard 1964a.

NEW YORK

Sodus--August 16, 1923, infesting buckwheat. (Report by C. R. Crosby to IPS).

Ithaca--October 1-3, 1939, 3 alatae in trap. (Coll. by W. F. Rochow and det. J. O. Pepper). North Lansing--June 15 to August 7, 1964, 2 alatae; June 9 to August 16, 1965, 10 alatae in sticky traps. (Coll. by F. W. Zettler and det. by J. O. Pepper). See Leonard 1968.

CONNECTICUT

Short Beach--May 20, 1953, alatae on the wing. This is the first record of the greenbug for Connecticut. (Report by J. B. Kring to SRS).

RHODE ISLAND

I can find no record of the occurrence of the greenbug in this State.

MASSACHUSETTS

". . . near Boston, where it seems to have been found by Mr. Paul Hayhurst in September, 1908 . . ." (Webster and Phillips, p. 19). I have been unable to further substantiate this collection (M.D.L.).

NEW HAMPSHIRE

Dr. J. C. Conklin, Chairman, Department of Entomology, University of New Hampshire, wrote me in April 1968 that his files contain no record of the greenbug in New Hampshire.

MAINE

Presque Isle--6 collections of *alatae* in traps during August 1941 (coll. and det. by W. A. Shands and G. W. Simpson); *alatae* taken in traps from June 1953-June 1963 (coll. by Shands, Simpson and H. E. Wave).

No specific locality--was present in small numbers on oats. (Report by L. W. Boulanger and R. W. Paulson, summary 1955 in SRS).

On April 10, 1968, W. A. Shands wrote me as follows: "Over the years we recorded *Schizaphis* (Toxoptera) *graminum* occasionally on oats but usually in trace numbers only. Once in awhile it was fairly common on perennial grasses (mostly witch-grass) growing in the stands of oats, however here again it was never really abundant. From its sporadic occurrence, one might think the initial infestations were windborne--coming from outside the Aroostook area."

NEW BRUNSWICK, CANADA

"The only records I have were collections taken in traps at Woodstock August 5, 1949, Point Escuminac August 29, 1951 and Alma August 6, 1951." (M. E. MacGillivray, 1955). Fredericton--1958, on *Agropyron repens* (det. by MacGillivray).

NOVA SCOTIA

"I cannot give you definite records of *S. graminum* from Nova Scotia but I recall that they occurred in trap catches that I examined between 1945 and 1950." (MacGillivray in litt.).

* * * * *

It is believed the following information is of pertinent interest here:

Dr. G. B. Orlob (1961) has described from New Brunswick, Canada, *Schizaphis graminum phlei* new subspecies. The technical description and accompanying notes are on pages 498-500. His initial statement is as follows:

"During May, a *Schizaphis*-like aphid appeared on *Phleum pratense* L. in the Fredericton area. Feeding habit, damage inflicted on the host, as well as morphological characters suggested that this aphid was nothing but the well-known greenbug, *Schizaphis graminum* (Rondani). Other features, such as a yellow

color and the presence of exclusively apterous forms early in the season, were not considered typical for S. graminum s. str. Soon it became apparent that the aphid from timothy differed also from the greenbug in its host range and the production of sexuales. Because of these characters the aphid is described as a new subspecies of S. graminum."

The type material (an apterous viviparous female) is dated June 1, 1960, Fred-erickton, New Brunswick, on Phleum pratense.

On page 500 under "Comments" are most interesting notes on several Schizaphis graminum-like aphids which have been reported from the USSR and several other European countries.

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PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

All reports and inquiries pertaining to this release, including the mailing list, should be sent to:

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Plant Pest Control Division
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United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT**HIGHLIGHTS**Current Conditions

CORN EARWORM moths increased in blacklight trap collections in Cumberland County, New Jersey; larvae problem on sweet corn in Bayfield County, Wisconsin. (p. 941).

EUROPEAN CORN BORER much heavier on corn than in 1967 in Brown and Doniphan Counties, Kansas; boll feeding becoming economic problem on cotton in southeast Missouri. (pp. 941, 944). SORGHUM WEBWORM heavy in sorghum in Mayes County, Oklahoma, and in southeast Missouri. (p. 942).

SOD WEBWORM outbreak on lawns most serious in several years in Cache County, Utah; moths extremely abundant in Prince Georges County, Maryland. (p. 942).

ALFALFA CATERPILLAR adult flights heavy in Graham and Yuma Counties, Arizona. (p. 943).

CABBAGE LOOPER flights heavy in central and southern Alabama, southeast Arkansas, and in all lettuce-growing areas of Arizona. (pp. 944-945).

BEEF ARMYWORM and ALFALFA LOOPER larvae heavy on 2,000 acres of lettuce in Contra Costa County, California. (p. 945).

RED-BANDED LEAF ROLLER adult activity continues high at Vincennes, Indiana. (p. 945).

MOSQUITO situation continues very serious in southern Mobile County, Alabama. (p. 948). Total of 551 SCREW-WORM cases reported in southwest U.S. September 22-28. HORN FLY very numerous on cattle in areas of Texas and Oklahoma. (p. 949).

A WHITE-FRINGED BEETLE recorded for first time in Texas. (p. 951).

Detection

New State records include a LACE BUG in Pennsylvania (p. 948), a WHITE-FRINGED BEETLE and BANDED WOOD SNAIL in Texas (pp. 951, 953), COCONUT SCALE in Hawaii (p. 952), and a NOCTUID MOTH in Arizona (p. 953).

For new county and island records see page 953.

Special Report

Cereal Leaf Beetle Quarantine Map. Centerfold.

Reports in this issue are for week ending September 27 unless otherwise indicated.

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WEATHER BUREAU'S 30-DAY OUTLOOK

OCTOBER 1968

The Weather Bureau's 30-day outlook calls for temperatures to average below seasonal normals over most of the Nation except for above normal temperatures in the Pacific Coast States and near normal temperatures over the northern third of the Country between the Rockies and the eastern Great Lakes. Precipitation is expected to be subnormal over most of the Nation except for near normal amounts in the Great Lakes region, the northwest Pacific coast, and the gulf and South Atlantic States, with heavier amounts in Florida.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$5.00 a year.

WEATHER OF THE WEEK ENDING SEPTEMBER 30

HIGHLIGHTS: Most citizens enjoyed warm sunny days and clear cool nights last week. A cold front brought generous rains to mid-America early in the week and a tropical disturbance drenched the Miami, Florida, area shortly after midweek.

PRECIPITATION: Heavy rains fell early in the week along a slow-moving cold front that stretched from Michigan to Texas. A torrential downpour accompanied by hail and high winds stopped traffic in the Boonville, Missouri, area late Monday afternoon and Troy, Missouri, received 4.12 inches in a few hours Monday evening. Heavy showers fell in north-central Texas west of Dallas Tuesday night with some localities receiving 2 to 5 inches. Lesser amounts fell from New England to the Carolinas on Wednesday and Thursday as the front advanced south-eastward. Precipitation totals ranged widely in the East, however, and many areas missed by the showers continued dry. A tropical depression doused the lower east coast of Florida late in the week. North Miami received 9.10 inches of rain in the 24 hours ending at noon Friday. Other spots in the area received over 4 inches. About 0.5 inch fell at Tower Falls and La Grange, Wyoming, and heavy showers occurred at Clovis and Los Alamos, New Mexico, but totals were generally less than 0.25 inch from the northern Great Plains to the southern Rockies and wide areas from western North Dakota to California received no rain or only widely scattered light sprinkles. Weather of the Week continued on page 952.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

BEET LEAFHOPPER (*Circulifer tenellus*) - IDAHO - Large acreages of Russian thistle in critical desert areas of State. Heavy rains during August germinated mustards for overwintering populations. These conditions may produce one of highest populations going into autumn in recent years. May be very serious problem next spring. (PPC West. Reg., Aug. Rpt.).

CORN EARWORM (*Heliothis zea*) - NEW JERSEY - Increased in blacklight trap collections at Seabrook and Cedarville, Cumberland County. (Ins.-Dis. Newsltr.). ALABAMA - Larvae very heavy and damaging late okra in home gardens in Florala, Covington County. (Stephenson). WISCONSIN - First instar to full-grown larvae prevalent on corn in most northeastern and eastern counties. Problem on sweet corn in Bayfield County. (Wis. Ins. Sur.). NEBRASKA - First to third instars averaged 12 per 60 sweeps in Lancaster County alfalfa field. (Keith).

GREENBUG (*Schizaphis graminum* (In broad sense))* - NEBRASKA - Ranged 2-16 (average 8) per foot of drill row on 5 wheatfields in Lancaster, Otoe, Johnson, and Gage Counties. No predators and parasites observed. No aphids detected in 2 sorghum fields in Otoe County. (Keith). SOUTH DAKOTA - Absent on winter wheat checked in Stanley, Jones, Mellette, Todd, Lyman, and Tripp Counties. (Jones). UTAH - Outbreak in feed sorghums became serious in late August and early September in Dixie area of Washington County. Lady beetle buildup reduced infestations in most fields. (Huber, Knowlton).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - OKLAHOMA - Averaged 80 per 10 sweeps in alfalfa checked in Tillman County. (Okla. Coop. Sur.). NEBRASKA - Averaged 25 per 60 sweeps on 2 Lancaster County alfalfa fields. (Keith). CALIFORNIA - Medium in 10 acres of alfalfa at Fresno, Fresno County. (Cal. Coop. Rpt.).

TOBACCO BUDWORM (*Heliothis virescens*) - CALIFORNIA - Heavy larval infestations destroying geranium flower buds at Madera, Madera County; light to medium at Carlsbad, San Diego County. (Cal. Coop. Rpt.).

TOMATO HORNWORM (*Manduca quinquemaculata*) - WASHINGTON - More abundant than usual past 3 months in Yakima County; damaging potatoes in southeastern area. (Landis).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - MISSOURI - Fifth instars infested 0-11 percent of late-planted sorghum stalks in southwest area; most of tunnels just below heads. (Munson). KANSAS - Much heavier on corn than in 1967 in Doniphan and Brown Counties. Larvae 2-5 per plant on 80-100 percent of plants. Stalk breakage not yet severe in most cases. (Simpson). SOUTH DAKOTA - Annual fall abundance survey completed in Union, Lincoln, and Turner Counties. Increased on corn in Union County, but decreased in Lincoln and Turner Counties. (Jones). DELAWARE - Adults averaged 27 per night in blacklight trap collections in western Sussex County September 21-27. (Burbutis).

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - NEW MEXICO - Infestation 100 percent in cornfield at Deming; 5 percent of stalks lodged. Infestation 60 percent in other fields. (Durkin, Sept. 20). TEXAS - Moderately heavy in corn and grain sorghum near Stephenville, Erath County. This is a new county record. (Riherd, Sept. 18). KANSAS - Lodged 25-50 percent of plants in experimental corn plots in Stafford County. (Wilde).

* According to recent taxonomic studies by L.M. Russell. This aphid on sorghum appears to be this species.

SORGHUM WEBWORM (Celama sorghiella) - OKLAHOMA - Present in 11 percent of grain sorghum heads in Jackson County. Heavy numbers in Mayes County. Moderate numbers in Ottawa County. (Okla. Coop. Sur.). MISSOURI - Heavy on late sorghum in southeast area. (Jones). MISSISSIPPI - Larvae moderate to heavy, 4-5 per head, on 50 acres of grain sorghum in Oktibbeha County and on 40 acres in Lowndes County. (Dinkins).

WESTERN BEAN CUTWORM (Lexagrotis albicosta) - COLORADO - Larvae extensively damaged corn at Burlington, Kit Carson County. (Ball, Hantsbarger).

FALL ARMYWORM (Spodoptera frugiperda) - WISCONSIN - Larvae more common in corn ears in some counties than H. zea (corn earworm). (Wis. Ins. Sur.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ARIZONA - Heavy on corn and sorghum at ranch in Parker area, Yuma County. (Ariz. Coop. Sur.).

CORN ROOTWORMS (Diabrotica spp.) - WISCONSIN - D. longicornis adults still prevalent in late corn in eastern counties. (Wis. Ins. Sur.). SOUTH DAKOTA - D. virgifera adults 1-2 per stalk in most green cornfields in Union and Lincoln Counties. Adults 2 per 50 stalks in cornfield east of Mission, Todd County. (Jones).

SORGHUM MIDGE (Contarinia sorghicola) - MISSISSIPPI - Moderate on 50 acres of grain sorghum in Oktibbeha County. (Dinkins).

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) - MISSOURI - Collected on sorghum heads at Mt. Vernon, Lawrence County, September 25 by R.E. Munson and J.L. Huggans. This is a new county record. (Munson).

A WHITEFLY (Aleurocybotus occiduus) - ARIZONA - Heavy in many sorghum fields in Yuma County. (Ariz. Coop. Sur.).

SMALL GRAINS

PALE WESTERN CUTWORM (Agrotis orthogonia) - KANSAS - Collected 1,750 moths September 24 in blacklight traps at Hugoton, Stevens County, and 1,450 September 23 at Garden City, Finney County. Declining further north; trapped 41 moths September 24 at Tribune, Greeley County, and 57 at Colby, Thomas County; 45 collected at Colby September 26. (Simpson).

TURF, PASTURES, RANGELAND

RHODES-GRASS SCALE (Antonina graminis) - ARIZONA - Infested Tifgreen Bermuda grass lawns in many areas of Salt River Valley, Maricopa County. (Ariz. Coop. Sur.). CALIFORNIA - Adults medium on Kikuyu grass at Encinitas, San Diego County. (Cal. Coop. Sur.).

SOD WEBWORMS - UTAH - Larvae damaging lawns at Logan, Cache County. Most serious outbreak in past several years. (Knowlton, Davis, Sept. 24). MARYLAND - Crambus spp. moths extremely abundant at night in Greenbelt and New Carrollton, Prince Georges County. (U. Md., Ent. Dept.).

A FLEAHOPPER (Spanogonicus albofasciatus) - ARIZONA - Heavy in 2 dichondra lawns in southwest Phoenix area, Maricopa County. (Ariz. Coop. Sur.).

CHINCH BUGS (Blissus spp.) - MARYLAND - Damage heavy to lawn at Hancock, Washington County. (U. Md., Ent. Dept.).

A GROUND PEARL (Margarodes meridionalis) - ARIZONA - Heavy in 12 Tifgreen Bermuda grass lawns at Tempe, Maricopa County. (Ariz. Coop. Sur.).

FORAGE LEGUMES

ALFALFA CATERPILLAR (*Colias eurytheme*) - NEW MEXICO - Adults heavy in alfalfa in Eddy County week ending September 20; larvae 4-8 per 25 sweeps. (Mathews). Light in alfalfa in southern Dona Ana County week ending September 27; flights heavy over some fields. (Campbell, Elson). ARIZONA - Heavy flights in Graham and Yuma Counties. Larvae averaged 280 per 100 sweeps in alfalfa in Yuma County. (Ariz. Coop. Sur.).

BEE T ARMYWORM (*Spodoptera exigua*) - KANSAS - Probably this species severely damaged seedling alfalfa in Finney County; ranged 4-10 per row foot. (DePew). ARIZONA - Larvae 550 per 100 sweeps in alfalfa at Yuma. (Ariz. Coop. Sur.).

FALL ARMYWORM (*Spodoptera frugiperda*) - OKLAHOMA - Averaged 8 per square yard and 1 per 10 sweeps in 2 alfalfa fields in Tillman County. (Okla. Coop. Sur.).

GREEN CLOVERWORM (*Plathypena scabra*) - NEBRASKA - Larvae per 60 sweeps averaged 11 on 2 Lancaster County alfalfa fields and 5 on red clover field in Otoe County. (Keith).

CABBAGE LOOPER (*Trichoplusia ni*) - ARIZONA - Larvae 70 per 100 sweeps in alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.).

A NOCTUID MOTH (*Tathorhynchus* sp.) - NEBRASKA - Abundant in alfalfa near Holdrege, Phelps County. (Loeppke). Larvae averaged 10 per 60 sweeps on 2 Lancaster County alfalfa fields. (Keith).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Average per 100 sweeps in alfalfa by county: Yuma, 90 at Yuma; Pinal, 150 at Casa Grande; Graham, 375 at Safford. (Ariz. Coop. Sur.). NEW MEXICO - Averaged 8-12 per 25 sweeps in alfalfa at Roswell, Chaves County. (Mathews). Averaged 6 per 25 sweeps in alfalfa in southern Dona Ana County. (Campbell, Elson). OKLAHOMA - Damaged up to 70 percent of plants in some alfalfa in Johnston County. (Okla. Coop. Sur.).

PEA APHID (*Acyrtosiphon pisum*) - WISCONSIN - Continues to increase slowly in alfalfa in State. Highest count averaged 60 per sweep in Dodge County field; much lower, rarely above 2 per sweep in eastern counties. (Wis. Ins. Sur.). NEW MEXICO - Generally light in alfalfa in southern Dona Ana County. (Campbell, Elson).

LYGUS BUGS (*Lygus* spp.) - NEBRASKA - Averaged 21.5 per 60 sweeps on 2 alfalfa fields in Lancaster County. (Keith).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - WISCONSIN - Adults still prevalent in alfalfa in eastern counties. (Wis. Ins. Sur.). SOUTH DAKOTA - Adults heavy, 128 per 100 sweeps, in alfalfa field adjoining corn in southwestern Lincoln County. (Jones).

CORN ROOTWORMS (*Diabrotica* spp.) - WISCONSIN - *D. undecimpunctata howardi* common in alfalfa in State. Some *D. virgifera* found in alfalfa in Dodge and a few central counties. (Wis. Ins. Sur.).

A GRASSHOPPER (*Melanoplus* sp.) - PENNSYLVANIA - Feeding browned crown vetch for a few miles on banks along U.S. Highway 22 and 322 north of Amity Hall, Perry County. Determined by E.E. Simons. (Steslow, Sept. 5).

SOYBEANS

GREEN CLOVERWORM (*Plathypena scabra*) - ALABAMA - Larvae very heavy in 50-acre field in Marengo County; about 20 percent of foliage consumed. Several large flights noted at Dauphin Island last week. (Yates et al.).

CABBAGE LOOPER (*Trichoplusia ni*) - ALABAMA - Adult emergence generally heavy in southern and central areas last 7-10 days. Adults numerous on outside walls of several buildings in Mobile and at lights in Lee County for about a week. (Seibels et al.).

VELVETBEAN CATERPILLAR (*Anticarsia gemmatilis*) - ALABAMA - Larvae light and feeding on foliage of late-planted soybeans in Marengo County. (Yates).

NOCTUID MOTHS (*Heliothis* spp.) - ARKANSAS - Of larvae collected from Lonoke County this week, 28 determined *H. zea* and none *H. virescens*. Of larvae taken from Jefferson County, 20 determined *H. zea* and none *H. virescens*. (Boyer).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - ALABAMA - Adults heavy and feeding on foliage in several late-planted fields in Marengo County; controls applied to some fields. (Miller et al.). OKLAHOMA - Moderate in Mayes County. (Okla. Coop. Sur.).

STRAWBERRY SPIDER MITE (*Tetranychus atlanticus*) - ARIZONA - Averaged 1,500 per leaf September 13 on experimental soybeans at Yuma, Yuma County; controls excellent. (Ariz. Coop. Sur.).

PEANUTS

SOUTHERN CORN ROOTWORM (*Diabrotica undecimpunctata howardi*) - VIRGINIA - Larvae numerous and damaging in scattered fields in Nansemond County; damage up to 50 percent in some peanut plots. (Smith).

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - ALABAMA - Larvae destroyed half or more of peanuts during season on large farm in southeastern Coffee County. Infestations and damage worse in 1968 in fields where peanuts planted in 1967. (Presley).

COTTON

BOLLWORMS (*Heliothis* spp.) - NEW MEXICO - *H. zea* generally light in southern Dona Ana County. (Elson, Campbell). Infestations ranged 0-20 percent in Chaves County. (Mathews). TEXAS - *H. zea* and *H. virescens* generally under control in Trans-Pecos region; nearly 50 percent *H. virescens* in Reeves County week ending September 13. (Neeb). OKLAHOMA - *H. zea* infestations averaged 20 percent in Johnston County; moderate in Marshall County; light in Bryan and Cleveland Counties. (Okla. Coop. Sur.). ARKANSAS - Of 1,099 larvae collected in State during 1968, 112 (10.2 percent) determined *H. virescens*. *H. virescens* ranged 0.9-10.2 percent of population during 1962-1968. (Boyer).

A NOCTUID MOTH (*Pseudoplusia includens*) - MISSISSIPPI - Several moths collected in light trap at Starkville, Oktibbeha County, September 23-27 by J. Boling. (Dinkins).

CABBAGE LOOPER (*Trichoplusia ni*) - TEXAS - Generally light in Trans-Pecos region. (Neeb).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - MISSOURI - Boll feeding becoming economic problem in late cotton in southeast area. (Jones).

GREENHOUSE WHITEFLY (*Trialeurodes vaporariorum*) - TEXAS - Still heavy in Bowie County; honeydew heavy in some fields. (Turney, Green).

COLE CROPS

CABBAGE LOOPER (Trichoplusia ni) - OREGON - Controls on cauliflower and broccoli very effective in Willamette Valley; no infestations reported. (Larson).
ARKANSAS - Flight continues heavy in southeast area; 477 moths taken in light trap September 21-27 at Kelso, Desha County. (Boyer). NEW JERSEY - Decreased on crucifers due mainly to virus disease. (Ins.-Dis. Newsltr.).

CABBAGE APHID (Brevicoryne brassicae) - NEW JERSEY - This species and Myzus persicae increasing on crucifers in central and southern counties. (Ins.-Dis. Newsltr.).

CUCURBITS

POTATO APHID (Macrosiphum euphorbiae) - CALIFORNIA - Heavy on squash plants at San Rafael, Marin County. (Cal. Coop. Rpt.).

GENERAL VEGETABLES

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Heavy flights in all lettuce-growing areas. Egg laying increasing. Eggs averaged 3 per plant in Yuma County. Controls applied regularly to most fields. (Ariz. Coop. Sur.). NEW MEXICO - Eggs and young larvae heavy in lettuce in Dona Ana County; controls applied frequently. (Campbell, Sept. 20).

BET ARMYWORM (Spodoptera exigua) - CALIFORNIA - Larvae of this species and Autographa californica (alfalfa looper) heavy on 2,000 acres of lettuce at Brentwood, Contra Costa County. (Cal. Coop. Rpt.).

MORNING-GLORY LEAF MINER (Bedellia somnulentella) - CALIFORNIA - Larvae heavy in sweetpotato leaves at Vista and San Luis Rey, San Diego County. (Cal. Coop. Rpt.).

SLUGS - WISCONSIN - Damage continues in vegetable gardens; problem statewide. (Wis. Ins. Sur.).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Carpocapsa pomonella) - WASHINGTON - Peak third-brood emergence occurred in Yakima County week ending September 3; heavy emergence continued the following week until cool weather. (Johnson). INDIANA - Adults continue to decrease at Vincennes. Male captures totaled 56 in 36 traps during week (132 previous week). (Dolphin, Sept. 23).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - INDIANA - Adults decreasing in bait traps at Vincennes; 137 adults caught during week (515 previous week). (Dolphin, Sept. 23).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - INDIANA - Adult activity continues high at Vincennes; some fluctuation week to week. Male captures totaled 669 during week (529 previous week). (Dolphin, Sept. 23).

LESSER PEACH TREE BORER (Synanthedon pictipes) - INDIANA - Adult captures continue to decrease slowly in Vincennes orchard; 183 males caught in 60 traps containing composite of 720 females. (Dolphin, Sept. 23).

PACIFIC FLATHEADED BORER (Chrysobothris mali) - WASHINGTON - Feeding in large brace roots of 3 to 4-year-old cherry trees at White Salmon, Klickitat County, September 13; killed or damaged about 50 trees. (Shanks).

A SCARAB (*Pleocomma crinita*) - OREGON - Female about 2 feet in ground beneath apple tree in orchard at Hood River, Hood River County. First and later instars noted. Recent heavy rains did not produce adult emergence in area. Larvae can be damaging to apple root systems. (Westcott, Sept. 6).

WHITE PEACH SCALE (*Pseudaulacaspis pentagona*) - FLORIDA - Fourth-generation egg hatch about 50 percent on peaches in northern area. (Whitcomb). ALABAMA - Rapidly increasing on trunks and limbs of 12-acre peach orchard in Geneva County; damage noted. Problem in southern area more evident than in northern area. (Reynolds, Leeper). VIRGINIA - Found heavy on cherry trees in Fairfax County September 20. (Gugino, Amos).

APPLE MAGGOT (*Rhagoletis pomonella*) - VIRGINIA - Found locally severe on dooryard apples in Westmoreland County September 11. (Ptucha, Amos). INDIANA - Second adult flight decreasing at Vincennes; adult captures on stickyboards declined from 256 to 160. (Dolphin, Sept. 23). MICHIGAN - Still laying eggs in late-variety apples in most fruit-growing areas of State. (Wooley, Sept. 24). WISCONSIN - Adults continue to be caught in traps at East Troy (5) and north Bayfield (5); none taken at Neenah. (Wis. Ins. Sur.).

EUROPEAN RED MITE (*Panonychus ulmi*) - INDIANA - Decreasing gradually in most apple orchards at Vincennes. Developing eggs on leaves decreasing as more overwintering eggs deposited on stems. (Dolphin, Sept. 23). MICHIGAN - Still numerous on apples where control inadequate during summer. Overwintering eggs readily observed on small twigs and in calyx end of apples. (Wooley, Sept. 24).

FALL WEBWORM (*Hyphantria cunea*) - TEXAS - Infesting El Paso County pecan trees. (Neeb). NEW MEXICO - Second-generation larvae moderate on pecans at Stahmanns, Dona Ana County. Wasp parasitism heavy in some webs. (Durkin, Sept. 20). OREGON - Larvae migrated last week at Salem, Marion County. Unusually abundant in 1968. Almost completely defoliated many trees, especially walnut. (Westcott).

PECAN WEEVIL (*Curculio caryae*) - TEXAS - Heavy numbers damaged pecans extensively at Junction, Kimble County, and at Menard, Menard County. (Harp).

APHIDS - ALABAMA - *Monellia* spp. increased to greater levels than *Myzocallis caryaefoliae* on pecans throughout Covington County. (Linder, Stephenson). CALIFORNIA - *Chromaphis juglandicola* nymphs and adults medium on English walnuts at Woodacre, Marin County. (Cal. Coop. Rpt.).

WALNUT HUSK FLY (*Rhagoletis completa*) - CALIFORNIA - Infested up to 100 percent of nuts on black and dooryard English walnuts in many northern locations. Lack of treatment or poor timing resulted in ineffective control. (Cal. Coop. Rpt.).

UNIFORM STATE AND CANADIAN QUARANTINES

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- A map of the Lake Umbagog watershed area. The lake is shown in blue, with a grid overlay. The grid cells are labeled: 'PRESQUE ISLE' (top left), 'WATNA' (top right), 'WATNA' (middle left), 'WATNA' (middle right), 'WATNA' (bottom left), and 'WATNA' (bottom right). The lake is bordered by 'LAKE UMBAGOG' to the north and 'LAKE UMBAGOG' to the south. The map also shows the 'LAKE UMBAGOG' watershed area, with labels for 'LAKE UMBAGOG' and 'LAKE UMBAGOG'.

U.S. Department of Agriculture, Agricultural Research Service, Plant Pest Control Division, cooperating with affected States and Canada.

Revised August 1968.

(See reverse for 11st of regulated articles.)

27, 34, 35 and 36, in Township 24 North, Range 13 West.

LIVINGSTON CO. -- Sections 1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23, 24, in Township 27 North, Range 8, East; and Sections 8, 9, 10, 11, 14, 15, 16, 17, 20, 21, 22 and 23 in Township 28 North, Range 8 East.

MOULTRIE CO. -- Section 11 In Township 12 North, Range 5 East; and Sections 21, 22, 23, 26, 27, 28, 33, 34 and 35 In Township 14 North, Range 4 East; and Sections 2, 3 and 4 In Township 13 North, Range 4 East.

SHELBY CO. -- Sections 9, 10, 14, 15, 16, 21, 22, 23, 26, 27 and 28 in Township 12 North,
Range 5 East.

WILL CO. ** Entire Townships of Crete, Frankfort, Green Garden, Monee, Peotone, Washington and Will.

WEST VIRGINIA

WOOD CO. -- Harris magisterial district.

(1)

Small grains (except oats and barley) and grass and forage seed, cleaned to meet State or Canadian seed sales requirements are

Year-Round

Fodder and Plant Litter

Regulated articles and their certification periods are as follows:

<u>Crop or Article</u>	<u>Certification Period</u>
Small grains, such as Barley, Oats, and Wheat (1)	June 1 - Nov. 30
Corn (SHELLED corn is NOT regulated)	Year-Round
Fresh Market (sweet corn)	
Ear Corn, other than sweet corn	August 1 - March 31
Grass and Forage Seed (1)	Year-Round
Hay (except marsh hay) (2)	June 1 - Jan. 15
Straw and Marsh Hay	July 1 - Feb. 28
Sod	Year-Round
Used Harvesting Machinery	Year-Round
Fodder and Plant Litter	Year-Round

(1)

Small grains (except oats and barley) and grass and forage seed, cleaned to meet State or Canadian seed sales requirements are exempt from certification.

(2)

Pelletized hay is exempt from certification and treatment requirements.

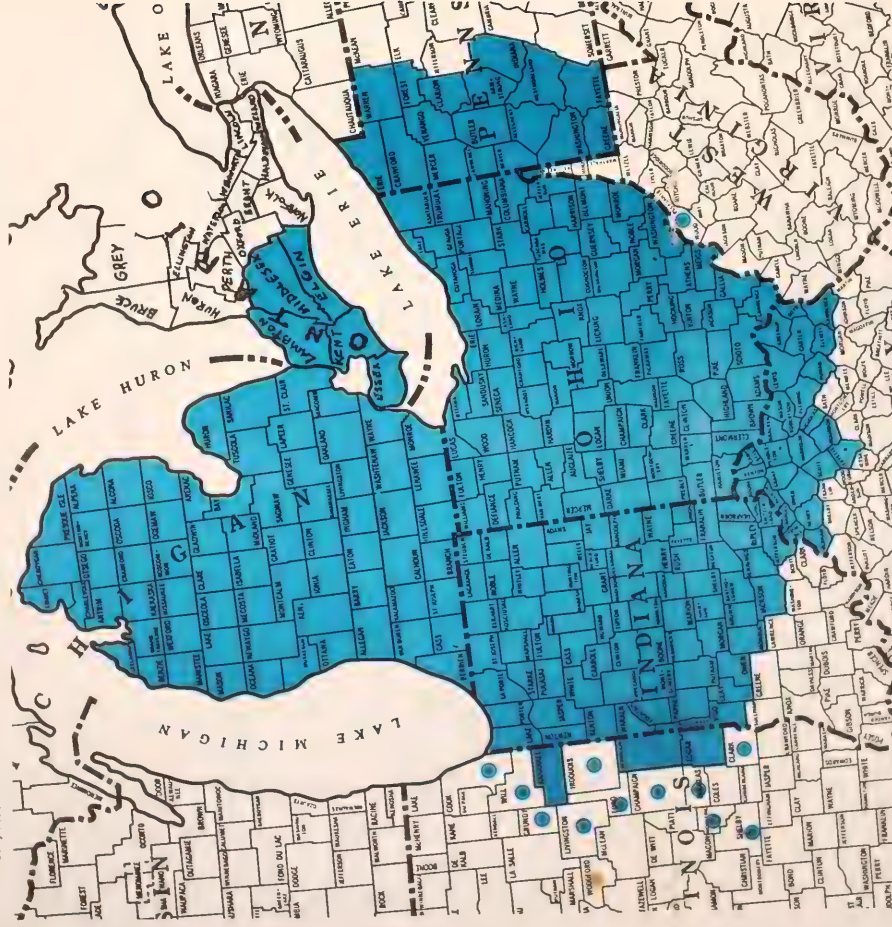
CEREAL LEAF BEETLE

UNIFORM STATE AND CANADIAN QUARANTINES

Counties entirely colored are completely regulated; counties with blue dot are partially regulated.

Yellow dot: Overall eradication treatments made; no quarantine regulations necessary.

Certificates are required for movement of regulated articles from a blue area into or through a white or yellow area.



In the United States, consult your State or Federal Plant Pest Control Inspector or your county agent and, in Canada, your nearest Plant Protection Division Office for assistance regarding areas under regulation and requirements for moving regulated articles.

U.S. Department of Agriculture, Agricultural Research Service, Plant Pest Control Division, cooperating with affected States and Canada.

Revised August 1968.

(See reverse for list of regulated articles.)

Counties Partly Regulated

ILLINOIS

CHAMPAIGN CO. — Sections 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35 and 36. In Township 19 North, Range 9 East; Sections 4, 5, 8, 9, 16 and 17 in Township 20 North, Range 14 West; and Sections 4 and 9, Township 22 North, Range 14 West.

CLARK CO. — Sections 22, 23 and 24 in Township 12 North, Range 13 West; and Section 19 in Township 12 North, Range 12 West.

COOK CO. — All of Bloom Township and Rich Township.

DOUGLAS CO. — Sections 28 and 33 in Township 16 North, Range 14 West.

FORD CO. — Sections 6, 7, 18 and 19 in Township 27 North, Range 9 East; and Sections 28 and 33, Township 23 North, Range 14 West.

GRUNDY CO. — Sections 22, 23, 24, 25, 26, 27, 34, 35 and 36, in Township 34 North, Range 7 East; and Sections 19, 30 and 31 in Township 34 North, Range 8 East.

IROQUOIS CO. — Sections 30 and 31 in Township 24 North, Range 12 West; and Sections 25, 26, 27, 34, 35 and 36, in Township 24 North, Range 13 West.

LIVINGSTON CO. — Sections 1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23, 24, in Township 27 North, Range 8 East; and Sections 8, 9, 10, 11, 14, 15, 16, 17, 20, 21, 22 and 23 in Township 28 North, Range 8 East.

MOULTRIE CO. — Section 11 in Township 12 North, Range 5 East; and Sections 21, 22, 23, 26, 27, 28, 33, 34 and 35 in Township 14 North, Range 4 East; and Sections 2, 3 and 4 in Township 13 North, Range 4 East.

SHELBY CO. — Sections 9, 10, 14, 15, 16, 21, 22, 23, 26, 27 and 28 in Township 12 North, Range 5 East.

WILL CO. — Entire Townships of Cretz, Frankfort, Green Garden, Moner, Pectone, Washington and Will.

WEST VIRGINIA

WOOD CO. — Harris magisterial district.

Regulated articles and their certification periods are as follows:

<u>Crop or Article</u>	<u>Certification Period</u>
Small grains such as Barley, Oats, and Wheat (1)	June 1 - Nov. 30
Corn (SHELLED corn is NOT regulated) Fresh Market (sweet corn) Ear Corn, other than sweet corn	Year-Round August 1 - March 31
Grass and Forage Seed (1)	Year-Round
Hay (except marsh hay) (2)	June 1 - Jan. 15
Straw and Marsh Hay	July 1 - Feb. 28
Sod	Year-Round
Used Harvesting Machinery	Year-Round

CITRUS

ORANGE-DOG (Papilio cresphontes) - ARIZONA - Heavy on foliage at Wellton, Yuma County. (Ariz. Coop. Sur.).

SMALL FRUITS

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - ARIZONA - Damaging foliage of many grapevines in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

A FLEA BEETLE (Altica ignita) - ARKANSAS - Numerous adults skeletonized Armore strawberries in Crawford County. Collected by M. Tucker. Determined by E.P. Rouse. (Boyer, Sept. 20).

STRAWBERRY APHID (Chaetosiphon fragaefolii) - OREGON - Alates migrating; fall populations building up on strawberries in Willamette Valley. (Every).

A PSYLLID (Trioza tripunctata) - FLORIDA - Second and third instars heavy on wild blackberry near Torreya State Park, Liberty County, September 19; severe stunting and distortion. (Mead, Weems). This is a new county record. (Fla. Coop. Sur.).

SPIDER MITES (Tetranychus spp.) - NEW JERSEY - Building up again on strawberries, especially in fields not treated past 2 weeks. (Ins.-Dis. Newsltr.).

ORNAMENTALS

TEA SCALE (Fiorinia theae) - FLORIDA - Severe on 50-75 percent of several hundred camellia and holly plants at 2 nurseries in Lake County. (Williams, Sept. 19).

A CARPENTER BEE (Ceratina dupla) - PENNSYLVANIA - Probably this species light on about 20 acres of roses at Jennersville, Chester County. Larvae in cells of some stems. Determined by E.E. Simons. (Negley, Forer, Sept. 19).

HAG MOTH (Phobetron pithecium) - MISSOURI - Severe leaf feeding on canna in south-central area. (Raaf).

FOREST AND SHADE TREES

BLACK TURPENTINE BEETLE (Dendroctonus terebrans) - ALABAMA - Larvae and adults damaged shade pine trees in Lee County; several large lawn trees dying. (Leeper et al.).

COOLEY SPRUCE GALL APHID (Adelges cooleyi) - OHIO - Galls in moderately damaging numbers on several spruce in ornamental planting in Portage County. (Galford, Sept. 18). Infested spruce in Cuyahoga County. (Miller, Sept. 20).

FALL WEBWORM (Hyphantria cunea) - NEW MEXICO - Very heavy on shade trees in Dona Ana County. Defoliation heavy on many poplars; much webbing. (Elson). TEXAS - Activity light to medium on oak trees in Hunt, Hopkins, Franklin, Titus, Morris, and Bowie Counties. Active on mulberry and poplar trees in El Paso County. (Turney et al.).

MIMOSA WEBWORM (Homadaula anisocentra) - TENNESSEE - Still active on mimosa in central and western areas. (Jackson, Quillin).

YELLOW-NECKED CATERPILLAR (Datana ministra) - ALABAMA - Larvae feeding on red and blackjack oak foliage in Lee, Randolph, Macon, and Chambers Counties; more numerous than in several years. (Cunningham, Barwood).

CECROPIA MOTH (*Hyalophora cecropia*) - OHIO - Defoliation by this species and Sibine stimulea (saddleback caterpillar) moderate to heavy on several maple trees in Montgomery County. (Galford, Sept. 15).

ELM LEAF BEETLE (*Pyrrhalta luteola*) - NEVADA - Adults entering hibernation in infested areas of Lincoln County; damage unusually heavy at Caliente and Panaca areas and generally light at Pioche. Light on elms in Esmeralda County northwest of Tonopah, Nye County. Esmeralda County is a new county record. (Bechtel et al.). TEXAS - Activity heavy in Dallas, Denton, Collin, Hunt, Hopkins, Franklin, and Titus Counties. (Turney, Green). OKLAHOMA - Late instars, probably third generation, light on Siberian elms in northwestern area; defoliation moderate to heavy. (Okla. Coop. Sur.).

BRONZE BIRCH BORER (*Agrilus anxius*) - OREGON - Last instars extensively damaged ornamental birch at Pendleton, Umatilla County. This infestation in residential area for several years. Controls effective on some trees; other trees removed. (Westcott).

A LACE BUG (*Corythucha bellula*) - PENNSYLVANIA - Discolored hawthorn leaves on about fifty 8 to 10-foot-tall trees. Collected by F.B. Negley August 7, 1968, about 5 miles west of Butler, Butler County. Determined by R.C. Froeschner. This is a new State record. (Simons).

HAWTHORN LACE BUG (*Corythucha cydoniae*) - PENNSYLVANIA - Medium in about 10 acres of 6 to 7-foot serviceberry trees in nursery at Dubois, Clearfield County. Determined by E.E. Simons. (Wolff, Sept. 17).

SYCAMORE LACE BUG (*Corythucha ciliata*) - VIRGINIA - Damage severe on some sycamore trees in Montgomery County. (Kosztarab).

A RHOPALID BUG (*Leptocoris rubrolineatus*) - CALIFORNIA - Eggs and adults heavy on boxelder trees at Alamo, Contra Costa County. Many reports of invasions into homes, particularly in northern area. (Cal. Coop. Rpt.).

BOXELDER BUG (*Leptocoris trivittatus*) - OKLAHOMA - Numerous on various trees in northwest Oklahoma City, Oklahoma County. (Okla. Coop. Sur.).

PAINTED MAPLE APHID (*Drepanaphis acerifoliae*) - CALIFORNIA - Adults medium on silver maple trees at Ventura, Ventura County. (Cal. Coop. Rpt.).

A SAWFLY (*Macremphytus* sp.) - PENNSYLVANIA - Larvae on boxwood in Cameron County. Determined by D.R. Smith. (Gesell, August 9). This is a new host record for genus. (Sailer).

MAN AND ANIMALS

MOSQUITOES - FLORIDA - Treatment required in entire pasture area of large dairy farm near Green Cove Springs, Clay County. (Strayer). ALABAMA - Situation continues very serious in southern Mobile County; *Aedes sollicitans* annoying almost everyone. (Seibels). WISCONSIN - Still biting on warm days. Very little activity in northeast area where problems encountered in previous years. (Wis. Ins. Sur.). MICHIGAN - Still annoying homeowners over much of State; controls unnecessary. (Janes, Sept. 24). PENNSYLVANIA - One *Uranotaenia sapphirina* in light trap in Crawford County September 6 for a new county record. (Green).

FACE FLY (*Musca autumnalis*) - MISSOURI - Collected and determined by C.W. Wingo at Mt. Vernon, Lawrence County, for a new county record. (Munson). TENNESSEE - Medium to heavy on beef cattle on farm in Davidson County July 17. Collected by R. Quillin. Determined by R. Gagne. This is a new county record. (Quillin).

HOUSE FLY (*Musca domestica*) - NEBRASKA - Averaged 10 per scudder grid in 10 Lancaster County feedlots; up to 100 per grid in feed storage areas. (Campbell).

OKLAHOMA - Ranged 12-15 per scudder grid in untreated barns in Payne County. (Okla. Coop. Sur.).

HORN FLY (*Haematobia irritans*) - TEXAS - Heavy on Crockett and Hudspeth County cattle. (Neeb). OKLAHOMA - Counts per head ranged 1,000-1,500 in Woodward, Major, and Garfield Counties and 750-1,000 in Payne and Noble Counties. Heavy in Choctaw County and moderate in Marshall, Bryan, and Cleveland Counties. (Okla. Coop. Sur.). NEBRASKA - Averaged about 100 per side on 2 herds near Lincoln, Lancaster County. (Campbell).

STABLE FLY (*Stomoxys calcitrans*) - OKLAHOMA - Ranged 3-4 per head on cattle in Payne and Noble Counties; heavy on horses in Cherokee County. (Okla. Coop. Sur.). NEBRASKA - Ranged 10-20 per leg on 10 feedlot herds in Lancaster County. (Campbell).

SCREW-WORM (*Cochliomyia hominivorax*) - Total of 551 cases in U.S. September 22-28 as follows: TEXAS - Atascosa 4, Bandera 2, Bastrop 1, Bee 5, Bexar 2, Brewster 13, Brooks 25, Cameron 1, Comal 3, Crockett 32, De Witt 2, Dimmit 18, Duval 2, Ector 1, Edwards 22, Fayette 1, Frio 6, Gillespie 2, Glasscock 1, Goliad 3, Gonzales 1, Guadalupe 1, Hidalgo 12, Howard 1, Irion 1, Jeff Davis 14, Jim Hogg 4, Jim Wells 6, Jones 1, Karnes 4, Kendall 3, Kenedy 10, Kerr 2, Kimble 6, Kinney 50, Kleberg 1, Lampasas 3, La Salle 2, Live Oak 2, Llano 1, Maverick 11, McCulloch 1, Mason 3, Medina 14, Nolan 1, Nueces 3, Pecos 36, Presidio 6, Real 5, Reeves 1, Refugio 5, San Patricio 3, Schleicher 1, Starr 9, Sterling 3, Sutton 5, Terrell 17, Tom Green 2, Uvalde 17, Val Verde 78, Victoria 1, Webb 14, Willacy 3, Wilson 2, Winkler 3, Zapata 5, Zavala 11; ARIZONA - Graham 2, Greenlee 1, Maricopa 1, Pima 1, Santa Cruz 3, Yuma 1; CALIFORNIA - Riverside 2, San Diego 6; NEW MEXICO - Eddy 1, Grant 1, Lea 1. Total of 1,803 cases reported in portion of Barrier Zone in Republic of Mexico September 9-27 as follows: Baja California 7, Territorio sur de Baja California 80, Sonora 529, Chihuahua 474, Coahuila 457, Nuevo Leon 162, Tamaulipas 94. Total of 121 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 92,168,000; New Mexico 3,280,000; Arizona 10,260,000; California 1,400,000; Mexico 83,020,000. (Anim. Health Div.).

HORSE FLIES (*Tabanus* spp.) - OKLAHOMA - Moderate on cattle in Choctaw County. *T. lineola* complex ranged 2-3 per head and *T. atratus* averaged 5 per 10 head in Payne and Noble Counties. *T. mularis* ranged 4-5 per head on deer in Cherokee County. (Okla. Coop. Sur.).

HORSE BOT FLY (*Gasterophilus intestinalis*) - OKLAHOMA - Adults averaged 2 per head on horses checked in Payne County. (Okla. Coop. Sur.).

BROWN RECLUSE SPIDER (*Loxosceles reclusa*) - ALABAMA - Specimens collected from homes in Dallas, Bibb, and Walker Counties past 30-60 days. Dallas and Walker are new county records. (Ledbetter et al.).

STORED PRODUCTS

COWPEA WEEVIL (*Callosobruchus maculatus*) - FLORIDA - Adults infested commercial grain and seed company at Orlando, Orange County, September 13; controls requested. (Denning).

RICE WEEVIL (*Sitophilus oryzae*) - TEXAS - Heavy infestation damaged seed wheat at Denton, Denton County. (Turney).

INDIAN-MEAL MOTH (*Plodia interpunctella*) - NEBRASKA - Heavy in stored milo near Ashland, Saunders County. Several other reports received. (Keith).

BENEFICIAL INSECTS

LADY BEETLES - NEW MEXICO - Averaged 9 per 25 sweeps in alfalfa, heavy in cotton in southern Dona Ana County. (Campbell, Elson). ARIZONA - Hippodamia convergens averaged 25 per 100 sweeps in alfalfa at Bonita, Cochise County. (Ariz. Coop. Sur.).

MELYRID BEETLES (Collops spp.) - ARIZONA - Averaged 30 per 100 sweeps in alfalfa in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

AN OSTOMID BEETLE (Temnochila sp.) - CALIFORNIA - Adults medium in oak logs at Kenwood, Sonoma County. This predaceous species unusually abundant in forests this season. (Cal. Coop. Rpt.).

GREEN LACEWINGS (Chrysopa spp.) - ARIZONA - Counts per 100 sweeps in alfalfa averaged 15 at Bonita, Cochise County, and 6 in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.). CALIFORNIA - C. californica unusually abundant statewide; numerous adults attracted to lights at night. (Cal. Coop. Rpt.).

HEMIPTEROUS PREDATORS - ARIZONA - Average per 100 sweeps in alfalfa: Orius spp., 30 at Bonita, Cochise County; Geocoris spp., 85 in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

HYMENOPTEROUS PARASITES - WASHINGTON - Parasitism of Brevicoryne brassicae (cabbage aphid) very high on untreated cabbage in Columbia County. (Brown, Retan, Sept. 20). TEXAS - Tetrastichus hagenowii heavily parasitized oothecae of Periplaneta fuliginosa (smoky-brown cockroach) in Brazos County. (Clark).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Moderate to heavy in Glasscock County. Migrating weevils generally infested Midland County. (Neeb).

CARIBBEAN FRUIT FLY (Anastrepha suspensa) - FLORIDA - Larvae severe in guava fruits at Brooksville, Hernando County, September 17. (Lowery). This is a new county record. (Fla. Coop. Sur.).

CITRUS BLACKFLY (Aleurocanthus woglumi) - MEXICO - Biological Control Zone - Infested 1,367 trees on 25 acres of 51,791 trees inspected on 808 acres in 3 municipios of Tamaulipas. Chemical Control Zone - Inspected 36,389 trees on 571 acres of 8 municipios of Nuevo Leon and 6 municipios of Tamaulipas. Infestations found on 145 trees on 12 acres at Linares, Nuevo Leon; inspections negative in Tamaulipas. Negative on 701 trees in 4 municipios of Baja California. (PPC Mex. Reg., Aug. Rpt.).

GYPSY MOTH (Porthetria dispar) - VERMONT - Five males collected to date in non-regulated area as follows: Two sites in Enosburg Township and one site in Berkshire Township, Franklin County, and one site each in Stowe and Waterville Townships, Lamoille County. NEW YORK - Caught 41 moths to date in 39 traps in 15 townships of 6 counties. Initial 1968 release of 108,000 Ooencyrtus kuwanai (an encyrtid wasp) in Greene County during August. PENNSYLVANIA - Released 258,000 O. kuwanai in Berks, Lebanon, Lehigh, Montgomery, Susquehanna, and Wayne Counties during August. NEW JERSEY - Males recovered at 94 new sites in non-regulated area. Seasonal totals to date are 151 positive trap sites in 54 towns. All counties with nonregulated areas contain positive sites. Infested total of 106,260 acres to date. Infestation light to medium on about 100 acres at positive trap site in Burlington County: egg masses generally ranged 10-50 per acre, but ranged 50-200 per tree on few trees near center of infestation. Egg masses noted at 21 locations during inspection of other positive trap sites; egg masses extensive at 2 of these sites. Released 41,621 Brachymeria intermedia (a chalcid wasp) and more than 172,000 O. kuwanai during August at positive trap sites. (PPC East. Reg.).

GRASSHOPPERS - NEW MEXICO - Averaged 2-5 per square yard in rangeland just north and northeast of Las Cruces; heavier in this area than in 1967. (Elson). NEBRASKA - Mostly Melanoplus femurrubrum and M. differentialis ranged 3-8 per square yard on borders of 5 wheatfields in Lancaster, Otoe, Johnson, and Gage Counties; damage light. Wheat 3-4 inches tall. (Keith).

JAPANESE BEETLE (Popillia japonica) - MAINE - One positive trap catch made at Lincoln, Penobscot County. This area is about 65 miles northeast of nearest point in regulated area. (PPC East. Reg., Aug. Rpt.).

MEXICAN FRUIT FLY (Anastrepha ludens) - MEXICO - Recaptured 12,164 sterile flies (7,498 females, 4,666 males) in 350 traps during 1,259 inspections at Tijuana, Baja California. Trapped one sterile fly August 19 at Tecate. No "native" flies collected. Results negative during 695 inspections of 150 traps at Ensenada. Nine "native" flies (6 females, 3 males) trapped at Tijuana as of August 31. Released aggregate of 3,550,000 sterile pupae at Tijuana during August; adult emergence averaged 84.4 percent. (PPC Mex. Reg.).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - Released 371,084 sterile moths in Kern County and 6,000 at Borrego, San Diego County. New synthetic sex lure used in about 3,000 traps in San Joaquin trapping areas this week; expected to be more efficient. No larval infestations detected in Kern County to date. Infestations on desert cotton averaged 25 percent in Coachella Valley and 21.22 percent in Palo Verde Valley, Riverside County; and 56 percent at Borrego, San Diego County. (Cal. Coop. Rpt.). NEVADA - Collected 10 males in sex lure traps in cotton September 13-20 in Pahump Valley, Nye County, and 14 September 23 and 15 September 25 in Moapa Valley, Clark County. One male in trap in hollyhock in Moapa Valley. (Bell, Yamashita). Damaged bolls with exit holes averaged 8 per 100 bolls on top third of cotton plants in Moapa Valley. (Bechtel, Zoller). ARIZONA - Larvae generally increased in most counties where treatment programs discontinued and cotton unpicked. Spreading into new areas in Pinal County. Building up in fields where wasp parasites introduced at Safford; 42 larvae in 100-boll sample in Graham County. (Ariz. Coop. Sur.). NEW MEXICO - Negative in 6 fields checked in Lewis Flats area of Deming, Luna County, week ending September 20. Infested 16 percent of field at Carlsbad, Eddy County. (Durkin, Mathews). Young larvae in bolls of only 2 samples during boll inspection week ending September 20 in Dona Ana County; infestation 4 percent in one sample and 8 percent in other. Currently no increase in fields previously checked in southern Dona Ana County; infestation 64 percent in top part of crop in isolated field not previously checked. (Elson, Campbell). Negative around Roswell, Chaves County. (Mathews). TEXAS - Generally light activity in Trans-Pecos region. Infested 5 percent of bolls in El Paso County field. Heavy in field at Corsicana, Navarro County. (Neeb, Turney). MEXICO - Infestations ranged 10-30 percent during green boll inspections in 13 monitored fields at Mexicali, Baja California, and in 6 monitored fields at San Luis, R.C. Sonora. Infestation 98 percent in another monitored field inspected at Mexicali. Collected 779 moths in 70 traps at Mexicali and 61 in 30 traps at San Luis, R.C. Larvae averaged 60 per acre during bloom inspections on 4 properties at Juarez, Chihuahua. Infestations 14 percent during green boll inspections in Laguna area of Coahuila and Durango; light in other acreage inspected in Tamaulipas, Chihuahua, Coahuila, and Durango. (PPC Mex. Reg., Aug. Rpt.).

WHITE-FRINGED BEETLES (Graphognathus spp.) - TEXAS - G. peregrinus on weeds along State Highway 12 at Deweyville, Newton County, July 31, 1968. Collected by B.D. Greer. Determined by R.E. Warner. This is a new State record. (Greer). VIRGINIA - Five new infestations found during August as follows: Two at Norfolk, 2 at Portsmouth, and 1 at Virginia Beach. (PPC East. Reg.). G. leucoloma fecundus adults light on ornamentals and weeds in Chesterfield County September 3. Treated 27 acres of residential grounds around infestation site. Collected by D.H. Kludy. Graphognathus sp. adults light on weeds in Mecklenburg County September 23. Collected by D.H. Crown and E. Drewery. Both counties are new county records. (Matheny).

HAWAII INSECT REPORT

New State Record - COCONUT SCALE (Aspidiotus destructor) collected by J.A. Tenorio on leaves of young coconut in Aikahi Park Subdivision at west Kailua, Oahu, September 22, 1968. Determined by J.W. Beardsley. A. destructor is widespread in tropical and subtropical regions. This species is a serious pest of coconuts in many areas and also attacks banana, papaya, mango, breadfruit, and many other plants. Preliminary survey revealed general distribution throughout subdivision on coconut; not detected on other hosts. Infestations light to moderate. Additional infestations on coconut in another area near subdivision. Appears well established at west end of Kailua. Negative in other areas of Oahu. Lindorus lophanthæ and Telsimia nitida (lady beetles) feeding on A. destructor in Aikahi Park. (Beardsley). Known to occur in several States in continental U.S. (PPC).

Vegetables - GINGER MAGGOT (Eumerus figurans) larvae heavy in ginger roots in farm at Kahaluu, Oahu. Larvae light on other ginger farms in area. CARMINE SPIDER MITE (Tetranychus cinnabarinus) continues troublesome on several crops, especially snap beans, at Waimanalo and Waianae, Oahu. Control difficult despite heavy spraying. Heavy on bell peppers at Hanapepe, Kauai. (Yamamoto, Sato). Adults and larvae of LEAF MINER FLIES (Liriomyza spp.) medium to heavy in 0.75 acre of cucumbers at Hanalei, Kauai; heavy in 3 acres of cucumber at Waimanalo, Oahu. (Sato, Masaki):

Fruits - BARNACLE SCALE (Ceroplastes cirripediformis) heavy on 10-acre area of 150-acre passion-fruit farm at Kahului, Maui; 100+ per foot of stem in many areas. Parasitism by Aneristis sp. (a eulophid wasp) light in this area, but effective in remaining 140 acres. (Miyahira). TOBACCO FLEA BEETLE (Epitrix hirtipennis) adult foliar damage heavy to 0.5 acre of poha (Physalis peruviana) at Lawai, Kauai. (Ikehara). LARGE MANGO TIP BORER (Bombotelia jocosatrix) found for first time on Kauai; several larvae on young mango foliage at Lihue. (Sugawa). Previously recorded only from Oahu. (PPC).

Man and Animals - HORN FLY (Haematobia irritans) adults heavy on herd of about 100 dairy heifers in open pasture along Kaluapulani Gulch, 4 miles southeast of Pukalani, Maui. (Miyahira). MOSQUITOES - Collected 80 Aedes vexans nocturnus and 4,378 Culex pipiens quinquefasciatus in 48 light traps on Oahu during August. A. vexans nocturnus remained light throughout area; C. pipiens quinquefasciatus heaviest at Waiialua. (Mos. Cont. Br., Dept. of Health).

Miscellaneous Insects - Adults and nymphs of a GRASSHOPPER (Oedaleus abruptus) light in dry, short grass between runways of Hickam Air Force Base at Honolulu, Oahu. Eradication efforts continue. (Olson). Adults of an ARMORED SCALE (Pinnaspis strachani) heavy on crotalaria, castorbean, and other weeds at Poipu, Kauai. (Sugawa).

Weather of the Week continued from page 940.

TEMPERATURE: Typical autumn weather prevailed over most of the Nation during the past week with warm sunny days and clear cool nights. Temperatures averaged slightly above normal over the Pacific Coast States, along the Atlantic coast, and over a narrow band extending from southern Colorado to New England and slightly below normal elsewhere. Parts of the Great Basin warmed to above normal by midweek but cooled to near or below normal by the weekend. The cold front brought cooler afternoon temperatures to the East but sunny skies and pleasant temperatures followed the brief showers. The Nation's extreme temperatures ranged widely. Fraser, Colorado, registered 12° Wednesday morning and maximums exceeding 100° occurred on several days in the southwestern deserts. Frost occurred on several mornings in spots in the northern Great Plains. (Summary supplied by Environmental Data Service, ESSA.)

INSECT DETECTION

New State Records

A NOCTUID MOTH (Anicla infecta) - ARIZONA - Eggs on wet laundry on clothesline at Scottsdale, Maricopa County. Collected by P. Min July 15, 1968. Det. by J.S. Burkett. This species is a general feeder on beets, bluegrass, clover, crabgrass, and tobacco; normal hosts are various grasses. (Ariz. Coop. Sur.).

BANDED WOOD SNAIL (Cepaea nemoralis) - TEXAS - Numerous on railroad right-of-way at Beeville, Galveston County, in May 1968. Collected by C.L. Edgar. Det. by W.J. Byas. (Edgar). This edible native European snail introduced into some widely separated States. Reported to be garden pest in some areas. (PPC).

A LACE BUG (Corythucha bellula) - PENNSYLVANIA - Discolored hawthorn leaves about 5 miles west of Butler, Butler County. Collected by F.B. Negley August 7, 1968. Det. by R.C. Froeschner. (p. 948).

A WHITE-FRINGED BEETLE (Graphognathus peregrinus) - TEXAS - On weeds along State Highway 12 at Deweyville, Newton County. Collected by B.D. Greer July 31, 1968. Det. by R.E. Warner. (p. 951).

COCONUT SCALE (Aspidiotus destructor) - HAWAII - On young coconut leaves at west Kailua, Oahu Island. Collected by J.A. Tenorio September 22, 1968. Det. by J.W. Beardsley. (p. 952).

New County and Island Records

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - TEXAS - Erath County. (p. 941).

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) - MISSOURI - Lawrence County. (p. 942).

A PSYLLID (Trioza tripunctata) - FLORIDA - Liberty County. (p. 947).

ELM LEAF BEETLE (Pyrrhalta luteola) - NEVADA - Esmeralda County. (p. 948).

A MOSQUITO (Uranotaenia sapphirina) - PENNSYLVANIA - Crawford County. (p. 948).

FACE FLY (Musca autumnalis) - MISSOURI - Lawrence County. TENNESSEE - Davidson County. (p. 948).

BROWN RECLUSE SPIDER (Loxosceles reclusa) - ALABAMA - Dallas and Walker Counties. (p. 949).

CARIBBEAN FRUIT FLY (Anastrepha suspensa) - FLORIDA - Hernando County. (p. 950).

WHITE-FRINGED BEETLES (Graphognathus spp.) - VIRGINIA - G. leucoloma fecundus in Chesterfield County. Graphognathus sp. in Mecklenburg County. (p. 951).

LARGE MANGO TIP BORER (Bombotelia jocosatrix) - HAWAII - Kauai Island. (p. 952).

LIGHT TRAP COLLECTIONS

State	County	Locality	Date	Time	Temp.	Wind	Humid.	Clouds	Pressure	Remarks	Specimens	Number of	Sex
FLORIDA													
		Gainesville	9/24-26										
KANSAS													
		Liby	9/24, 26										
		Garden City	9/23										
		Hogton	9/24										
		Tribune	9/24										
MISSISSIPPI													
		Stoneville	9/21-27										
MISSOURI													
		Fair Grove	9/19-25										
		Portageville	9/21-27										
NEW JERSEY													
		Evesboro	9/18-25										
		Seabrook	9/18-25										
OHIO													
		Hilliard	9/19-25										
TEXAS													
		Waco	9/21-27										
WISCONSIN													
		Madison	9/19-26										

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Hagerstown, Maryland 20782

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

CORN EARWORM heavy in field corn in Yavapai County, Arizona. (p. 957).

Preliminary EUROPEAN CORN BORER survey data indicate heaviest infestations in many years in southern Indiana. (p. 957). SOUTHWESTERN CORN BORER extremely heavy on sorghum in Maricopa County, Arizona. SORGHUM WEBWORM heavy on sorghum in Mayes and Bryan Counties, Oklahoma. (p. 958).

Larvae of a GEOMETRID MOTH defoliated several thousand acres of scrub oak in Iron County, Utah. (p. 958).

WESTERN YELLOW-STRIPED ARMYWORM larval infestations and migrations continue heavy in alfalfa in Lyon County, Nevada. (p. 959).

BEAN LEAF BEETLE heavy on soybeans in Haskell and La Flore Counties, Oklahoma. (p. 960).

BEET ARMYWORM heavy on sugarbeets in Maricopa County, Arizona. (p. 960).

CABBAGE LOOPER continues major problem on lettuce in Maricopa and Yuma Counties, Arizona. (p. 961).

MOSQUITO problem continues very serious in southern Mobile County, Alabama; adults heavy in Clark County, Nevada. (pp. 962, 963). Total of 661 SCREW-WORM cases reported in southwest U.S. September 28 to October 4. (p. 963).

WEST INDIAN SUGARCANE ROOT BORER infestation reported on citrus in Florida. This is second report of insect in U.S. (p. 964).

Detection

● EUROPEAN POTATO FLEA BEETLE found established in North America. Infested bitter nightshade in Albany and Greene Counties of New York. (p. 960). For background information on this pest, see page 965.

New State records include a BILLBUG in California (p. 958) and a CADDISFLY in Maryland (p. 967).

For new county records see page 967.

Special Reports

Survey Methods. Selected References for Last Half of 1967. Part XI (pp. 969-974).

White-Fringed Beetle Quarantine Map. Centerfold.

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WEATHER OF THE WEEK ENDING OCTOBER 7

HIGHLIGHTS: The first major cold outbreak brought freezing temperatures to central United States. Thundershowers occurred over most of the East and snow fell in the northern and central Rockies.

PRECIPITATION: Sparse showers occurred over the central Great Plains and parts of the Southeast early in the week but the first important precipitation fell as snow in the central Rockies and as cold rain in the northern Great Plains on Wednesday. In some areas, the rain and snow were driven by winds gusting to 45 to 50 m.p.h. Thunderstorms developed in the gulf air ahead of a cold front, occurring in the Great Lakes region and the Ohio River Valley on Wednesday and Wednesday night and from Texas to New England on Thursday. Sleet fell in central Iowa and the remnants of tropical storm Pauline brought heavy rains to parts of the usually dry Southwest. A tornado injured several persons and caused extensive property damage at Glendale, Arizona, Thursday night. Generous showers fell in the central United States on Saturday and from the Mississippi River to the Atlantic Ocean on Sunday. At the end of the week, a Pacific storm edged into the Far Northwest and snow began to fall in Montana. Weather of the week continued on page 966.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

CORN EARWORM (*Heliothis zea*) - NEW JERSEY - Moths increased sharply in blacklight traps at Seabrook and Cedarville. Recommended scheduled controls to continue on lettuce. (Ins.-Dis. Newsltr.). SOUTH CAROLINA - This species and *Spodoptera frugiperda* (fall armyworm) main soybean pests week ending September 25. Light to severe in many counties. *H. zea*, *S. frugiperda*, and *Anticarsia gemmatilis* (velvetbean caterpillar) damaging soybeans in Piedmont area week ending October 2. Control not necessary as dry weather already reduced yield in southern area. These species still threat in Greenwood and Newberry Counties. (Thomas). KANSAS - *H. zea* infested all of commercial sweet corn planting in Riley County. (Simpson). OKLAHOMA - Ranged up to 7 per ear in late sweet corn in Mayes County; infested all ears checked. (Okla. Coop. Sur.). ARIZONA - Heavy in field corn in Chino Valley, Yavapai County. (Ariz. Coop. Sur.).

CORN LEAF APHID (*Rhopalosiphum maidis*) - NEW MEXICO - Light on grain sorghum in Quay and Curry Counties. (Mathews). NEBRASKA - Ranged 0-18 (average 8) per row foot on 11 wheatfields in Lancaster, Seward, Otoe, Saline, Fillmore, Clay, and Adams Counties; light on corn. (Keith, Roselle). SOUTH DAKOTA - This species and *R. fitchii* (apple grain aphid) very light on winter wheat examined in Gregory, Tripp, Todd, Bennett, Washabaugh, Jackson, and Pennington Counties. (Kantack).

GREENBUG (*Schizaphis graminum* (In broad sense))* - SOUTH DAKOTA - Trace numbers, one per 25 plants, on winter wheat near Witten, Tripp County, and west of Mission, Todd County. Negative in other winter wheat checked in Gregory, Tripp, Todd, Bennett, Washabaugh, Jackson, and Pennington Counties. (Kantack). NEBRASKA - Generally light in 2 to 4-inch-tall wheat in southeastern, eastern, and southern areas. Ranged 0-16 (average 7) per row foot in 11 wheatfields checked in Lancaster, Seward, Otoe, Saline, Fillmore, Clay, and Adams Counties. (Keith et al.). Active in wheat in Platte County. (Kantor). KANSAS - Trace numbers on Greeley County sorghum week of September 23. (Brooks). OKLAHOMA - Averaged 4 per row foot in 6 to 10-inch wheat in Ottawa County field; light in wheat in Bryan County. (Okla. Coop. Sur.).

POTATO LEAFHOPPER (*Empoasca fabae*) - VIRGINIA - Nymphs and adults numerous, yellowed alfalfa field in Botetourt County. (Allen).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - OREGON - Alates and nymphs averaged less than 5 per sweep in alfalfa at Jacksonville, Jackson County; heavier at field margins. (Westcott). ARIZONA - Alates and colonies unusually numerous on 3 recently cut alfalfa fields in Perryville area, Maricopa County; only known area in county where heavy numbers exist despite treatment. Alates up to 10 per stem on some cut stems; unusual for time of year. (Ariz. Coop. Sur.). OKLAHOMA - Counts per 10 sweeps in alfalfa ranged 10-100 in Muskogee and Sequoyah Counties, 5-15 in Ottawa and Delaware Counties, and averaged 40 in Tillman County. (Okla. Coop. Sur.). SOUTH DAKOTA - Heavier, up to 150-200 per 100 sweeps, in field of 7 to 9-inch green alfalfa east of Spearfish, Lawrence County. (Jones). VIRGINIA - Averaged 1,500 per 100 sweeps in alfalfa field in Botetourt County. (Allen).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - INDIANA - Larvae averaged 99.97 per 100 plants and plant infestations averaged 50.89 percent during annual fall survey on corn in southern quarter of State. Preliminary survey data indicate heaviest infestations in many years in south-southcentral and south-southwest districts. (Huber, Sept. 27). MINNESOTA - Second-generation third to fifth instars on corn in south-central district; mostly fourth and fifth instars.

*According to recent taxonomic studies by L.M. Russell. This aphid on sorghum appears to be this species.

Second generation often in corn ears; ear infestations ranged 60-90 percent in Martin County. (Minn. Ins. Rpt., Sept. 27). SOUTH DAKOTA - Fall abundance survey completed in Brookings, Moody, and Minnehaha Counties. Increases noted on corn in Brookings and Moody Counties compared with 1967. (Jones).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - ARIZONA - Larvae extremely heavy, up to 5 per plant, in much late-planted, second-regrowth sorghum in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.). OKLAHOMA - Damaged 40 percent of late sweet corn ears in Mayes County; boring at base of ear. (Okla. Coop. Sur.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ARIZONA - Damage heavy to quarter field of late-planted sorghum at Yuma, Yuma County; boring noted in every stalk examined. Remaining 80 acres planted early in excellent condition. (Ariz. Coop. Sur.).

SORGHUM WEBWORM (Celama sorghiella) - OKLAHOMA - Averaged 8 per head in late grain sorghum in Tulsa County and 4 per head in Delaware County. Heavy on grain sorghum in Mayes and Bryan Counties. (Okla. Coop. Sur.).

FALL ARMYWORM (Spodoptera frugiperda) - KANSAS - Larvae averaged less than 1 per 100 ears of sweet corn in Riley County. (Simpson).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - ARIZONA - Adults collected in field corn on ranch at Kirkland, Yavapai County, by J. May. Determined by R.E. White. This is a new county record. (Ariz. Coop. Sur.).

CORN ROOTWORMS (Diabrotica spp.) - MINNESOTA - D. longicornis and D. virgifera adults still active, but rapidly leaving drying cornfields. Adults on almost every blooming plant. (Minn. Ins. Rpt., Sept. 27).

STRAWBERRY SPIDER MITE (Tetranychus atlanticus) - ARIZONA - Very heavy in many sorghum fields at Yuma, Yuma County. (Ariz. Coop. Sur.).

SMALL GRAINS

PALE WESTERN CUTWORM (Agrotis orthogonia) - KANSAS - Trapped 10,000+ moths in blacklight trap October 1 at Hugoton, Stevens County, and 3,000 September 30 at Garden City, Finney County. (Simpson).

WHITE GRUBS (Phyllophaga spp.) - MICHIGAN - Damaging fall-planted wheat in Montcalm County. Land still to be planted will be treated. (Janes, Oct. 1).

TURF, PASTURES, RANGELAND

A BILLBUG (Sphenophorus venatus vestitus) - CALIFORNIA - Adults medium on golf course greens at Ontario, San Bernardino County. Collected by G. Harper July 30, 1968. Determined by R.E. Warner. This is a new State record. (Cal. Coop. Rpt.).

A GEOMETRID MOTH (Hydriomena similis terminipunctata) - UTAH - Larvae defoliated several thousand acres of scrub oak in Cedar Mountain area of Iron County. Adults collected by W. Sjoblom. Determined by E.L. Todd. (Thornley, Sept. 30).

WESTERN FLOWER THRIPS (Frankliniella occidentalis) - UTAH - Extremely numerous in rabbitbrush blossoms in Wellsville and Logan Canyons, Cache County. Orius tristicolor (a flower bug) very numerous in same areas. (Knowlton, Sept. 30).

FORAGE LEGUMES

YELLOW-STRIPED ARMYWORMS (*Prodenia* spp.) - NEVADA - *P. praefica* larval infestations and migrations continue heavy in alfalfa in Smith and Mason Valleys, Lyon County. No regrowth occurred after third cutting in many fields due to heavy populations. Damage heavy on several late-cut fields. (Smith). VIRGINIA - Small *P. ornithogalli* larvae ranged 5-10 per 100 sweeps in alfalfa field in Roanoke County. (Allen).

BEEF ARMYWORM (*Spodoptera exigua*) - ARIZONA - Counts per 100 sweeps in alfalfa averaged 100 on west side of Maricopa County and 350 in Yuma and Parker areas, Yuma County; 2,000 per 100 sweeps in one field in Yuma County. (Ariz. Coop. Sur.).

ALFALFA CATERPILLAR (*Colias eurytheme*) - COLORADO - Larvae ranged 30-40 per 100 sweeps in alfalfa in Weld County. (Johnson). NEW MEXICO - Larvae averaged 1-5 per 25 sweeps in alfalfa at Corrales, Sandoval County. (Heninger).

PEA APHID (*Acyrtosiphon pisum*) - OREGON - Averaged 25-50 per sweep in several alfalfa fields in Jackson and Douglas Counties. (Westcott). COLORADO - Averaged 500-1,000 per 100 sweeps in alfalfa in Weld County. (Johnson). NEW MEXICO - Generally light in alfalfa in Dona Ana and Sandoval Counties. (Heninger et al.). OKLAHOMA - Counts per 10 sweeps in alfalfa averaged 250 in Ottawa County and 5 in Delaware County. (Okla. Coop. Sur.). VIRGINIA - Generally light to moderate in alfalfa in Montgomery and Roanoke Counties; up to 1,000 per 100 sweeps in one field. (Allen).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Increasing, averaged 450 per 100 sweeps in alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.). OKLAHOMA - Counts per 10 sweeps in alfalfa averaged 24 in Tillman County, 12 in Ottawa County, and one in Delaware County. (Okla. Coop. Sur.).

MEADOW SPITTLEBUG (*Philaenus spumarius*) - VIRGINIA - Adults moderate, 30-55 per 100 sweeps, in alfalfa in Montgomery, Roanoke, and Botetourt Counties. (Allen).

ALFALFA WEEVIL (*Hypera postica*) - NEW MEXICO - Larvae averaged 1-8 per 25 sweeps in alfalfa at Corrales, Sandoval County. (Heninger). COLORADO - Larvae 30-50 per 100 sweeps in few alfalfa fields in Weld County. (Johnson). SOUTH DAKOTA - Adults light, one per 100 sweeps, in alfalfa east of Spearfish, Lawrence County. Alfalfa growth 3-12 inches. (Jones). VIRGINIA - Larvae light in alfalfa in Roanoke, Montgomery, and Botetourt Counties. Third instars ranged 50-100 per 100 sweeps in field in Roanoke County. (Allen).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Adults per 100 sweeps in alfalfa averaged 230 in 80-acre field at Cashion, Maricopa County, 30 at Casa Grande, Pinal County, and 175 in Yuma County. (Ariz. Coop. Sur.). VIRGINIA - *L. lineolaris* adults 20-45 per 100 sweeps in alfalfa in Roanoke and Botetourt Counties. (Allen).

GRAY GARDEN SLUG (*Deroceras reticulatum*) - OREGON - Large acreages of crimson clover replanted near Hillsboro, Washington County, probably due mainly to this species. (Goeden).

SOYBEANS

GREEN CLOVERWORM (*Plathypena scabra*) - ALABAMA - Predominant pest in yellowing field near Foley, Baldwin County; 140 taken in 3 row feet. Also collected 18 *Anticarsia gemmatilis*, 9 *Heliothis* spp., 12 *Nezara viridula*, 3 *Trichoplusia ni*, 5 *Pseudoplusia includens*, 9 *Spissistilus festinus* nymphs, 5 *Prodenia ornithogalli*, and many other specimens in 3 row feet from this field; over 207 leaf and pod feeders present. Collected about 500 unspecified larvae per 3 row feet (2,250,000 per acre) in another field. Insects very high in many late-planted fields around Foley. Some controls applied in Clark County. (Wilson et al.). OKLAHOMA - *P. scabra* 10-25 per 10 sweeps in Haskell and Le Flore Counties. (Okla. Coop. Sur.).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - OKLAHOMA - Heavy in Haskell and Le Flore Counties; moderate in Mayes County. (Okla. Coop. Sur.).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - SOUTH CAROLINA - Damage noted throughout southern area. (Thomas, Sept. 25).

COTTON

BOLL WEEVIL (*Anthonomus grandis*) - NEW MEXICO - Negative in all fields inspected in southern Dona Ana County. (Campbell, Elson).

COTTON APHID (*Aphis gossypii*) - NEW MEXICO - Being controlled by high populations of beneficial species in southern Dona Ana County. (Campbell, Elson).

SUGARBEETS

BEET ARMYWORM (*Spodoptera exigua*) - ARIZONA - Heavy, feeding in crowns in many fields in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

POTATOES, TOMATOES, PEPPERS

EUROPEAN POTATO FLEA BEETLE (*Psylliodes affinis* (Paykull)) - NEW YORK - Collected on bitter nightshade (*Solanum dulcamara*) in several places in Albany and Greene Counties during July 1968. Collected and determined by R.W. Flowers and J.A. Wilcox, confirmed by R.E. White. This is a new North American record. (Flowers, Wilcox). *P. affinis* is found on belladonna, bitter nightshade, black henbane, *Lycium* sp., potato, tobacco, tomato, other solanaceous plants, and hops. This species is known to occur in the Soviet Union and throughout most of Europe. (PPC). For background report, see page 965.

TOMATO PINWORM (*Keiferia lycopersicella*) - CALIFORNIA - Larvae medium in 2-acre tomato field in Reedley, Fresno County. Very light in 1968. (Cal. Coop. Rpt.).

BEANS AND PEAS

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - ALABAMA - Larvae and adults continue heavy on abandoned beans and peas in gardens statewide. Feeding and development continues on soybeans and to lesser extent on kudzu. (Blake et al.).

COWPEA CURCULIO (*Chalcodermus aeneus*) - ALABAMA - Egg laying very heavy past 2 weeks on peas in Lee County gardens. Many "patches" of abandoned peas providing excellent breeding area for development of large overwintering populations. (Blake et al.).

WESTERN BEAN CUTWORM (*Loxagrotis albicosta*) - COLORADO - Larvae damaged pinto beans in Dove Creek area, Dolores County. (Alexander, Hantsbarger).

TWO-SPOTTED SPIDER MITE (*Tetranychus urticae*) - CALIFORNIA - Medium on bean plantings at Napa, Napa County. (Cal. Coop. Rpt.).

CUCURBITS

LEAFHOPPERS (*Empoasca* spp.) - ARIZONA - Heavy on 80 acres of cantaloups at Gila Bend, Maricopa County. (Ariz. Coop. Sur.).

GENERAL VEGETABLES

CABBAGE LOOPER (*Trichoplusia ni*) - ARIZONA - Continues major problem on lettuce in Maricopa and Yuma Counties. Egg laying so heavy, maintenance of regular spray program necessary to kill larvae. (Ariz. Coop. Sur.).

DECIDUOUS FRUITS AND NUTS

LESSER PEACH TREE BORER (*Synanthedon pictipes*) - INDIANA - Male captures low in orchard at Vincennes; caught 6 on five consecutive cool days and 78 over warm weekend. (Dolphin, Sept. 30).

ORIENTAL FRUIT MOTH (*Grapholitha molesta*) - OKLAHOMA - Heavy in peaches in Mayes County. (Okla. Coop. Sur.). INDIANA - Adults low in bait jars at Vincennes; decreased from 515 to 69 in two weeks. (Dolphin, Sept. 30).

CODLING MOTH (*Carpocapsa pomonella*) - INDIANA - Adults still light at Vincennes; 10 males taken during week (56 previous week) in sex lure traps. (Dolphin, Sept. 30).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - INDIANA - Collected 696 males during week in 36 virgin female traps (10 females per trap) despite cool weather at Vincennes; 669 taken previous week. (Dolphin, Sept. 30).

SAN JOSE SCALE (*Aspidiotus perniciosus*) - CALIFORNIA - Medium on Bartlett pear nursery stock at Sacramento, Sacramento County. (Cal. Coop. Rpt.).

APPLE MAGGOT (*Rhagoletis pomonella*) - INDIANA - Adult captures on stickyboards progressively lower each week at Vincennes; 31 taken week ending September 30. (Dolphin).

PEAR-SLUG (*Caliroa cerasi*) - CALIFORNIA - Locally heavy on pear trees in Cambria Pines, San Luis Obispo County. Populations remained late in season in 1968. (Cal. Coop. Rpt.).

APHIDS - ALABAMA - *Monellia* spp. and *Myzocallis caryaefoliae* continue heavy on unsprayed pecan trees in Covington, Dallas, Lee, and other southern counties. Aphid and mite damage with extremely dry conditions caused much defoliation. (Linder et al.).

FALL WEBWORM (*Hyphantria cunea*) - ALABAMA - Foliar feeding and webbing heavy in most pecan trees in Tallapoosa County. (Pinion).

CITRUS

CALIFORNIA RED SCALE (*Aonidiella aurantii*) - CALIFORNIA - Medium at Fremont, Alameda County. Very damaging on citrus in northern area this season. Parasite activity very light. (Cal. Coop. Rpt.).

CITRUS RED MITE (*Panonychus citri*) - ARIZONA - Buildup begun in some groves at Yuma, Yuma County. (Ariz. Coop. Sur.).

ORNAMENTALS

AZALEA BARK SCALE (*Eriococcus azaleae*) - OREGON - Infesting rhododendrons and azaleas at rhododendron test gardens in Portland. Leaves disfigured by sooty mold; bark on branches rough and malformed. Some plants stunted with some loss of twigs and branches. Present in Portland area since 1949. Has been found on State Capitol grounds. (Larson).

FOREST AND SHADE TREES

CONIFER APHIDS (*Cinara* spp.) - MARYLAND - *C. strobi* increasing on white pines throughout College Park area, Prince Georges County. (U. Md., Ent. Dept.).

SOUTH DAKOTA - Probably *Cinara* spp. heavy on ponderosa pines near Hot Springs, Fall River County. (Wiedmeier). COLORADO - *C. sabiniae* heavy on pinyon pines in Fort Collins area, Larimer County. (Kincaid).

A SOFT SCALE (*Ehrhornia cupressi*) - CALIFORNIA - All stages heavy on Arizona cypress in Highlands, San Bernardino County. (Cal. Coop. Rpt.).

HICKORY BARK BEETLE (*Scolytus quadrispinosus*) - IOWA - Contributing to death of large numbers of hickory trees in north-central area. Oviposition tunnels averaged 3 to 5 per square foot on trunks and larger branches. (Iowa Ins. Sur.).

ASIATIC OAK WEEVIL (*Cyrtopistomus castaneus*) - MISSOURI - Adults collected at lights in Gasconade and Franklin Counties for new county records. (Munson).

ELM LEAF BEETLE (*Pyrrhalta luteola*) - NEW MEXICO - On elm tree at Lordsburg, Hidalgo County. Collected by J. Elson July 11. Determined by R.E. White. This is a new county record. (N.M. Coop. Rpt.).

A FLEA BEETLE (*Altica torquata*) - CALIFORNIA - Larvae and adults heavy on willow at Bishop, Inyo County. (Cal. Coop. Rpt.).

MIMOSA WEBWORM (*Homadaula anisocentra*) - OKLAHOMA - Leaf damage ranged 5-100 percent during survey of 9 counties in north-central, northeastern, and east-central areas. (Okla. Coop. Sur.).

FALL WEBWORM (*Hyphantria cunea*) - NEW MEXICO - Heavy damage on many trees in Dona Ana County. (Elson, Campbell).

APHIDS - CALIFORNIA - *Thecabius populimonilis* nymphs medium on Lombardy poplars in El Dorado Hills, El Dorado County. (Cal. Coop. Rpt.). COLORADO - *Lachnus salignus* remains heavy on willow in Fort Collins area, Larimer County. (Kincaid).

MAN AND ANIMALS

MOSQUITOES - ALABAMA - *Aedes sollicitans* problem very serious along coastal areas of Mobile County. Dense concentrations annoying people in Fowl River area for more than 6 weeks and in all other coastal areas for past month. Mosquitoes "took over" after local spray program at Dauphin Island discontinued more than 2 weeks ago. (Seibels). DISTRICT OF COLUMBIA - *Psorophora confinnis* collected by H. Sollers-

Riedel September 10. Mosquito was attempting to bite. Determined by A. Stone. Species not commonly found in area. (Sollers-Riedel). MICHIGAN - Mosquitoes continue annoying in State. (Janes, Oct. 1). NEVADA - A. dorsalis and A. vexans adults heavy in southeastern Las Vegas and at East Las Vegas, Clark County. Many complaints received. (Earnist). A. dorsalis, A. melanomon, A. nigromaculis, and A. vexans medium to heavy at Schurz, Mineral County. (Lynch, Sept. 24).

SCREW-WORM (Cochliomyia hominivorax) - Total of 661 cases reported in U.S. September 28 to October 4 as follows: TEXAS - Atascosa 13, Bandera 5, Bee 5, Bexar 3, Blanco 1, Brewster 18, Brooks 11, Burnet 1, Cameron 1, Coke 2, Coleman 1, Comal 1, Concho 2, Crockett 35, De Witt 2, Dimmit 20, Duval 3, Ector 1, Edwards 27, Frio 8, Gillespie 7, Goliad 1, Gonzales 1, Guadalupe 1, Hays 3, Hidalgo 13, Howard 1, Irion 1, Jeff Davis 13, Jim Hogg 2, Jim Wells 11, Karnes 2, Kendall 5, Kenedy 24, Kerr 4, Kimble 9, Kinney 39, Kleberg 2, Lampasas 5, La Salle 7, Maverick 11, McCulloch 1, Martin 3, Mason 2, Medina 17, Menard 1, Midland 1, McMullen 3, Motley 1, Nueces 4, Pecos 28, Presidio 15, Real 9, Reeves 3, Refugio 3, San Patricio 2, Schleicher 6, Shackelford 1, Starr 16, Sterling 2, Sutton 20, Swisher 1, Terrell 41, Tom Green 2, Travis 1, Upton 1, Uvalde 35, Val Verde 42, Ward 1, Webb 30, Willacy 3, Wilson 3, Winkler 2, Yoakum 1, Zapata 4, Zavala 19; ARIZONA - Graham 1, Pinal 4, Santa Cruz 2, Yavapai 1; CALIFORNIA - Riverside 2, San Diego 4; NEW MEXICO - Dona Ana 1. Total of 794 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Territorio sur de Baja California 71, Sonora 136, Chihuahua 202, Coahuila 233, Nuevo Leon 103, Tamaulipas 49. Total of 65 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 96,118,000; New Mexico 2,180,000; Arizona 8,920,000; California 1,400,000; Mexico 78,080,000. (Anim. Health Div.).

HORN FLY (Haematobia irritans) - OKLAHOMA - Ranged 350-400 per head on cattle in Payne and Noble Counties. Moderate in Bryan and Cleveland Counties. (Okla. Coop. Sur.). MISSOURI - Averaged 387.5, 265.0, 197.0, 52.5, 372.5, 139.0, and 6.7 per cow (10-cow samples) on 7 central area farms. (Thomas). ILLINOIS - Averaged 76 per head in northeast area and 81 per head in west-southwest area. (Ill. Ins. Rpt.). VIRGINIA - Adults moderate on beef cattle herd in Craig County. (Allen).

STABLE FLY (Stomoxys calcitrans) - NEBRASKA - Averaged 10-15 per leg on 4 feedlot herds in Lancaster County. (Campbell). ILLINOIS - Averaged 4.2 per head in northeast area and 2.4 per head in west-southwest area. (Ill. Ins. Rpt.).

FACE FLY (Musca autumnalis) - MISSOURI - Averaged 0, 0, 0, 3.4, 0.5, 0.3, and 1.9 per face (10-cow samples) on 7 central area farms. (Thomas). ILLINOIS - Averaged 2.5 per face in northeast area and 6.8 per face in west-southwest area. (Ill. Ins. Rpt.). VIRGINIA - Adults annoying beef cattle herd in Craig County. (Allen).

HOUSE FLY (Musca domestica) - OKLAHOMA - Averaged 25 per scudder grid in 3 untreated barns in Payne County. (Okla. Coop. Sur.).

HOUSEHOLDS AND STRUCTURES

SOUTHERN LYCTUS BEETLE (Lyctus planicollis) - NEVADA - Heavy population severely damaged hardwood floor in home at Reno, Washoe County. Floor had to be replaced. (Ting).

STORED PRODUCTS

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) - MICHIGAN - Mainly this species numerous in stored wheat and corn in State. (Janes, Oct. 1).

A DERMESTID BEETLE (Trogoderma parabile) - NEVADA - This and Tribolium castaneum (red flour beetle) light to medium in cotton seed meal, pelleted livestock feed, grass seed, and oat seed in Pahump Valley, Nye County. (Bechtel et al.).

LESSER GRAIN BORER (Rhyzopertha dominica) - TENNESSEE - In stored oats in Davidson County. (Williams).

BENEFICIAL INSECTS

A PUNCTURE-VINE SEED WEEVIL (Microlarinus laeeynii) - NEW MEXICO - Infested about 50 percent of seeds checked at Las Cruces, Dona Ana County. (Durkin).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

GRASSHOPPERS - ARIZONA - Melanoplus spp. damage light to citrus foliage in Wellton area, Yuma County. Nymphs feeding in citrus nurseries and home plantings in Yuma and Maricopa Counties. (Ariz. Coop. Sur.). NEW MEXICO - Adults 1-3 per 25 sweeps in alfalfa at Corrales, Sandoval County. Heavy in weeds, flowers, and weedy orchards in Albuquerque, Bernalillo County. Heavy mortality due to Entomophthora sp., a fungus. (Heninger). NEBRASKA - Melanoplus spp. averaged 3-6 per square yard in wheatfield margins in southeastern, eastern, and southern areas. (Keith, Roselle). SOUTH DAKOTA - Control with an organic phosphate on field borders of winter wheat especially good at Quinn, Pennington County; up to 25-45 dead grasshoppers per square yard. Control good near Martin, Bennett County, and at Wall, Pennington County. M. bivittatus and M. differentialis present. (Kantack). MINNESOTA - Egg laying observed in central and south-central districts past week. M. tenerrubrum and M. differentialis active in afternoons with warm temperatures. Some M. bivittatus found dead or in very poor condition. (Minn. Ins. Rpt., Sept. 30).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - Control operations completed in Bard and Imperial Valleys, Imperial County, and in Palo Verde and Coachella Valleys, Riverside County. Individual growers may continue treatment. Two additional treatments considered in Riverside County district. Infestations about 15 and 23 percent in Imperial County and 21 percent in Palo Verde Valley and ranged 4.5-87.5 (average 30) percent in Coachella Valley, Riverside County. Sterile releases made on schedule at Borrego, San Diego County, and in Kern County. (Cal. Coop. Rpt.). NEVADA - Collected 4 males September 25 in sex lure traps in Pahump Valley, Nye County. Two growers defoliated fields. (Bell, Yamashita, Sept. 27). Larval infestations averaged 14 percent in green bolls in Moapa Valley, Clark County. (Bechtel et al.). ARIZONA - Fewer larvae than in 1967 found in Yuma County lint cleaners. Larvae averaged 1 per 5 bolls in Pinal County. (Ariz. Coop. Sur.). NEW MEXICO - Larvae infested 0-12 percent of bolls during green boll survey in extreme southern Dona Ana County. Larval infestations ranged 0-6 percent from Canutillo, Texas, north to Caballo Dam. Collected 62 moths from 5 sex lure traps in heavily infested field October 3. (Campbell, Elson).

SOYBEAN CYST NEMATODE (Heterodera glycines) - NORTH CAROLINA - Infested soybeans at Plymouth, Washington County, and at Aurora, Beaufort County. Collected by W. J. Westcott April 26. Determined by A.M. Golden. These are new county records. (PPC).

WEST INDIAN SUGARCANE ROOT BORER (Diaprepes abbreviatus (Linnaeus)) - FLORIDA - Larvae discovered seriously damaging roots of citrus nursery stock at nursery in Apopka, Orange County, September 16, 1968. (Kipp et al.). Adults discovered in same area September 25, 1968. Only other United States record was single adult found feeding on citrus foliage at same nursery on September 25, 1964, by C.J. Musgrove. See CEIR 14(49):1270 for this report and additional information. This weevil is a pest of citrus and sugarcane in the West Indies and is regarded as a potential threat to these crops in the State. Appropriate regulatory measures are being taken by State and Federal authorities. (Fla. Coop. Sur. and PPC).

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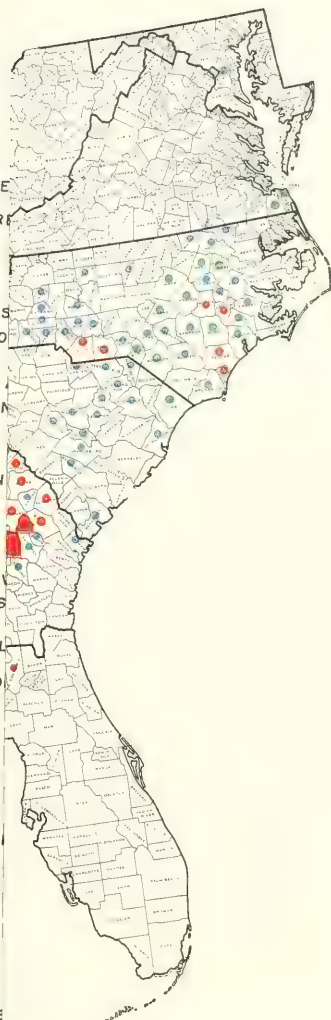
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3. GREEN INTO GREEN.
4. GREEN WITHIN GREEN °
5. BLUE INTO ANY OTHER AREA °°

° WHEN IT IS DETERMINED BY THE
SPREAD EXISTS.

°° ONLY WHEN REQUIRED BY STATE
BY AN AUTHORIZED INSPECTOR.

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Revised April 15, 1968

10. Seed cotton.
Seed cotton is exempt** if moving to a designated gin.*

WHITE - FRINGED BEETLE QUARANTINE

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE - PLANT PEST CONTROL DIVISION
COOPERATING WITH AFFECTED STATES

COUNTIES ENTIRELY COLORED ARE COMPLETELY REGULATED;
COUNTIES WITH COLORED DOT ARE PARTIALLY REGULATED.

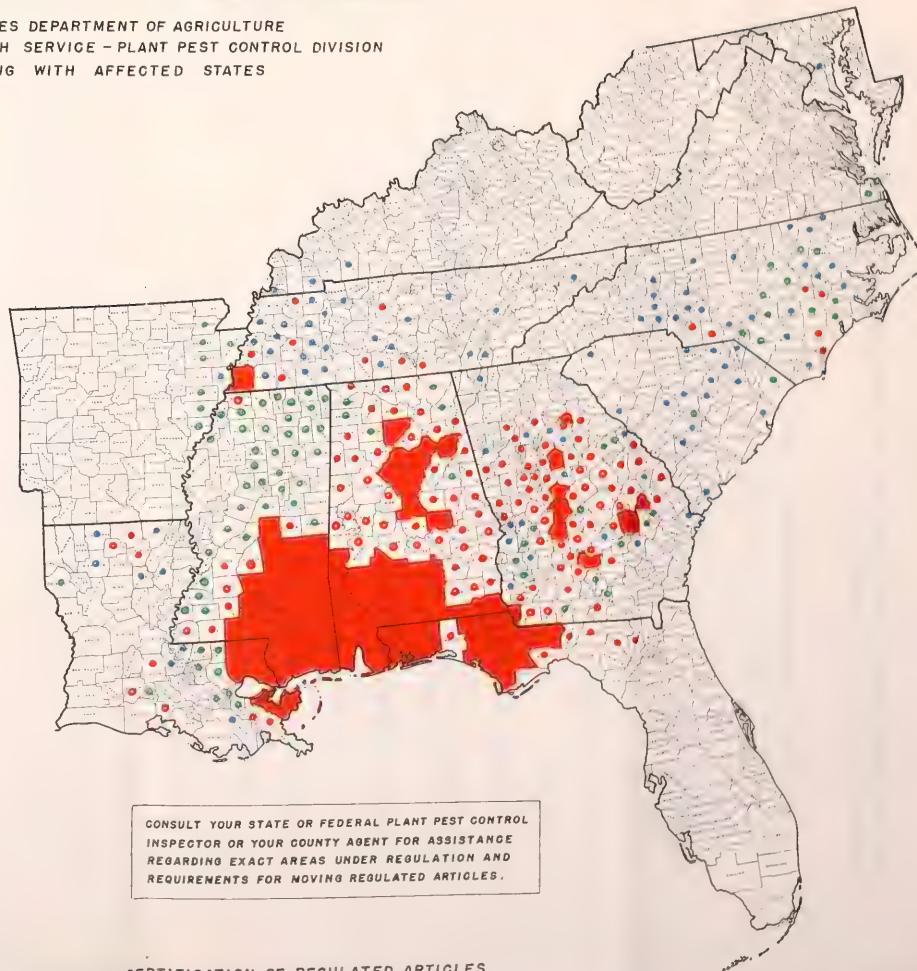
-  GENERALLY INFESTED AREA - STATE AND FEDERAL REGULATIONS.
(ERADICATIVE TREATMENTS NOT IN PROGRESS OR PLANNED.)
-  SUPPRESSIVE AREA - STATE AND FEDERAL REGULATIONS.
(SUPPRESSIVE TREATMENTS IN PROGRESS OR PLANNED.)
-  STATE REGULATIONS ONLY.
(SUPPRESSIVE TREATMENTS IN PROGRESS OR PLANNED.)

RESTRICTIONS ARE IMPOSED ON THE MOVEMENT OF REGULATED ARTICLES
FROM A REGULATED AREA AS FOLLOWS:

1. RED INTO OR THROUGH GREEN, BLUE, OR WHITE.
2. GREEN INTO OR THROUGH BLUE OR WHITE.
3. GREEN INTO GREEN.
4. GREEN WITHIN GREEN*
5. BLUE INTO ANY OTHER AREA**

* WHEN IT IS DETERMINED BY THE INSPECTOR THAT A HAZARD OF
SPREAD EXISTS.

** ONLY WHEN REQUIRED BY STATE QUARANTINE REGULATIONS OR
BY AN AUTHORIZED INSPECTOR.



CONSULT YOUR STATE OR FEDERAL PLANT PEST CONTROL
INSPECTOR OR YOUR COUNTY AGENT FOR ASSISTANCE
REGARDING EXACT AREAS UNDER REGULATION AND
REQUIREMENTS FOR MOVING REGULATED ARTICLES.

SEE REVERSE SIDE FOR REQUIREMENTS CONCERNING CERTIFICATION OF REGULATED ARTICLES.

11. Scrap metal and junk.

12. Brick, stone, concrete slabs, drainage pipes, and building blocks.

Brick, stone, concrete slabs, drainage pipes, and building blocks are exempt** if not exposed to infestation in storage or if the storage site has been treated with an approved pesticide.

13. Forest products, such as pulpwood, stumpwood, logs, lumber, and crossties.
Forest products, such as pulpwood, stumpwood, logs, lumber, and crossties are exempt** if not exposed to infestation in storage or if the storage site has been treated with an approved pesticide.

14. Used mechanized cultivating equipment and used harvesting machinery.

15. Used mechanized soil-moving equipment.

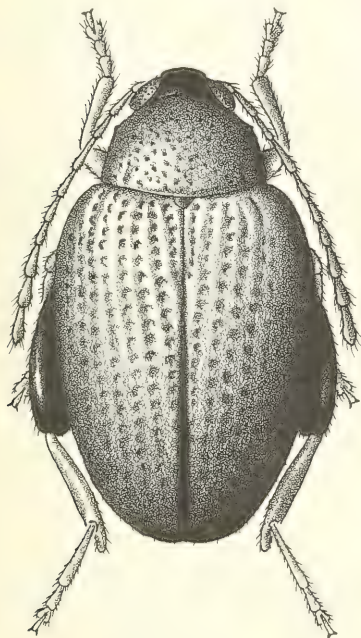
16. Any other products, articles, or means of conveyance, of any character whatsoever, not covered by the above when it is determined by an inspector that they present a hazard of spread of white-fringed beetles and the person in possession thereof has been so notified.

*Information as to designated laboratories and gins may be obtained from an inspector.

**Exempt if not exposed to infestation after cleaning or other prescribed handling.

EUROPEAN POTATO FLEA BEETLE (Psylliodes affinis (Paykull))

Economic Importance - This small beetle was found in July 1968 on bitter nightshade in Albany and Greene Counties, New York. On occasion, it is an important pest in the Molotov Province of the Soviet Union, but is not considered serious elsewhere in the USSR. In France, rather heavy damage occurs sporadically. Adults make round holes in the leaves and larvae attack the roots of the host plant. Although the European potato flea beetle prefers potatoes, it is generally considered a minor pest of this crop in Europe.



R. White

Adult of Psylliodes affinis

Host Plants - Belladonna, bitter nightshade, black henbane, Lycium sp., potato, tobacco, tomato, various other solanaceous plants, and hops.

Distribution - Most of Europe including the USSR and into Siberia.
United States: New York

Life History - Under conditions in France, overwintering adults appear in the latter half of April when they feed on the foliage of potato plants or other hosts. Females deposit eggs in May and these hatch in 6-8 days. Larvae feed on the rootlets and make galleries in the roots. Here they remain almost constantly. Development of larvae to pupae takes about one month. They leave the roots and pupation takes place in the soil a short distance from the host plant. Adults emerge in about 3 weeks and are abundant during July and August. There is one generation a year.

Description - Adult - Length 2-2.8 mm. Ovoid, overall color light tan. Head black, pronotum and elytra tan. Suture of elytra narrowly bordered with brown. Legs tan except hind femur which is black to reddish black and very large. Ventral surface black.

Interceptions - Adults have been taken with dahlia roots from Poland and in a package of rose stock from Germany.

Reference - Balachowsky, A. and Mesnil, L. 1936. Les Insectes Nuisibles aux Plantes Cultivées. Vol. 2:1303-1305.

THE FOLLOWING CROPS OR ARTICLES MUST BE MOVED UNDER CERTIFICATE OR PERMIT
YEAR-ROUND EXCEPT AS INDICATED:

1. Soil, compost, decomposed manure, humus, muck, and peat, separately or with other things.
Soil samples of one pound or less are exempt if shipped to a designated laboratory.*
Soil samples of any size shipped to U.S. Army Corps of Engineers Soil Laboratories within the continental United States are exempt.
Compost, decomposed manure, humus, and peat are exempt** if dehydrated, ground, pulverized, or compressed.
2. Plants with roots.
3. Grass sod.
4. Plant crowns and roots for propagation.
5. True bulbs, corms, rhizomes, and tubers of ornamental plants when freshly harvested or uncured.
6. Potatoes (Irish) when freshly harvested.
7. Peanuts in shells and peanut shells, except boiled or roasted peanuts.
8. Uncleaned grass, grain, and legume seed.
9. Hay and straw.
10. Seed cotton.
Seed cotton is exempt** if moving to a designated gin.*
11. Scrap metal and junk.
12. Brick, stone, concrete slabs, drainage pipes, and building blocks.
Brick, stone, concrete slabs, drainage pipes, and building blocks are exempt** if not exposed to infestation in storage or if the storage site has been treated with an approved pesticide.
13. Forest products, such as pulpwood, stumpwood, logs, lumber, and crossties.
Forest products, such as pulpwood, stumpwood, logs, lumber, and crossties are exempt** if not exposed to infestation in storage or if the storage site has been treated with an approved pesticide.
14. Used mechanized cultivating equipment and used harvesting machinery.
15. Used mechanized soil-moving equipment.
16. Any other products, articles, or means of conveyance, of any character whatsoever, not covered by the above when it is determined by an inspector that they present a hazard of spread of white-fringed beetles and the person in possession thereof has been so notified.

*Information as to designated laboratories and gins may be obtained from an inspector.

**Exempt if not exposed to infestation after cleaning or other prescribed handling.

HAWAII INSECT REPORT

Turf, Pasture - A GRASS WEBWORM (Herpetogramma licarsialis) apparently at lowest level on Maui since discovery in March 1968. Damage trace to very light in all previously infested pastures. Parasitism by Trichogramma semifumatum (a minute egg parasite) continued excellent. (Miyahira).

General Vegetables - BEAN FLY (Melanagromyza phaseoli) surveys negative in snap beans in Kula farming area on Maui. Light to medium on snap beans in scattered areas on Oahu and Kauai. (Miyahira, Sato).

Ornamentals - COCONUT SCALE (Aspidiotus destructor) light to medium on coconut leaves at Kaneohe, Sand Island, and Honolulu Airport area during survey on Oahu. Light on hala (Pandanus odoratissimus) and sentry palm (Howea sp.) at airport. Larvae and adults of Telsimia nitida and Lindorus lophanthæ (lady beetles) in all areas. (Funasaki).

Beneficial Insects - SOURBUSH SEED FLY (Acinia picturata) heavy on Pluchea odorata in Kahului, Kihei, and Waihee on west Maui. Infested 98.8 percent of 600 floral heads examined. (Ah Sam). Adults of a SCIONMYZID FLY (Sepedon sauteri) numerous on rice foliage in Wailua, Kauai. This predator of liverfluke snail apparently well established on Kauai; previously noted in Hanapepe, Hanalei, and Wainiha. (Funasaki). MELASTOMA BORER (Selca brunella) caused heavy foliar damage and destroyed many fruits of Melastoma malabathricum in Waiakea-uka area of Hilo, Hawaii Island. Larvae damaging terminal twigs. (Davis). Adults of TACHINA FLIES (Trichopoda pennipes and T. pennipes var. pilipes) moderate in flight and on various flowers at Kula and Pukalani, Maui; one or more eggs on about 90 percent of Nezara viridula adults. (Miyahira, Ah Sam).

Miscellaneous Insects - Larvae of a NOCTUID MOTH (Phlegetonia delatrix) caused much foliar damage to Java-plum (Eugenia cumini) in Honolulu (Palolo Valley), Oahu, and Wailua, Kauai. Larvae collected, reared to adults, and determined by M. Chong. P. delatrix first recorded in State from adults collected at light on Oahu in September 1964. Adults collected since from islands of Kauai and Hawaii. Java-plum first known host in State. (Funasaki).

Weather of the week continued from page 956.

TEMPERATURE: Temperatures averaged above normal over parts of the Great Basin, in New England, along the gulf coast, and in Florida, and below normal elsewhere. Some areas from the lower Missouri River Valley to the middle Appalachians averaged 4° to 7° below normal. The week began sunny and mild over most of the Nation. The Far West cooled somewhat during the week and the Southwest warmed again over the weekend. A cold front pushed into North Dakota and Minnesota early in the week and by the weekend had reached the Gulf of Mexico. Mild, sunny weather preceded the frontal passage but temperatures tumbled sharply as it passed. Temperatures in the central Great Plains dropped 40° to 50° from Wednesday afternoon to Friday morning; for example, from 81° to 32° at Moline, Illinois, during that period. Freezing temperatures occurred as far south as northern Arkansas Friday morning and by Saturday most of Kentucky and West Virginia and nearby portions of neighboring States had experienced freezing weather. Asheville, North Carolina, registered 29° Saturday morning. Over much of the Central and East, this was the first major cold outbreak of the season and brought the coolest weather since the end of May. (Summary supplied by Environmental Data Service, ESSA.)

INSECT DETECTION

New North American Record

EUROPEAN POTATO FLEA BEETLE (Psylliodes affinis (Paykull)) - NEW YORK - Collected on bitter nightshade (Solanum dulcamara) in Albany and Greene Counties during July 1968. Collected and determined by R.W. Flowers and J.A. Wilcox. Confirmed by R.E. White. (p. 960).

New State Records

A CADDISFLY (Potamyia flava) - MARYLAND - Adults collected by J. Hellman in blacklight trap near Fairland, Prince Georges County, August 21, 1968. P. flava common in Mississippi Valley, southeast to Georgia. Determined by O.S. Flint. (U. Md., Ent. Dept.).

A BILLBUG (Sphenophorus venatus vestitus) - CALIFORNIA - Adults on golf course at Ontario, San Bernardino County. Collected by G. Harper July 30, 1968. Determined by R.E. Warner. (p. 958).

New County Records

WESTERN CORN ROOTWORM (Diabrotica virgifera) - ARIZONA - Yavapai County. (p. 958).

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) - MISSOURI - Franklin and Gasconade Counties. (p. 962).

ELM LEAF BEETLE (Pyrrhalta luteola) - NEW MEXICO - Hidalgo County. (p. 962).

SOYBEAN CYST NEMATODE (Heterodera glycines) - NORTH CAROLINA - Beaufort and Washington Counties. (p. 964).

CORRECTIONS

CEIR 18(40):951 - WHITE-FRINGED BEETLES (Graphognathus spp.) - VIRGINIA - Change D.H. Crown to D.H. Craun. (Allen).

LIGHT TRAP COLLECTIONS

[illegible]

SURVEY METHODS

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Part XI

Additional copies of Parts I through XI of this bibliography are available from Survey and Detection Operations.

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

ARMY CUTWORM moth collections much heavier in 1968 than in last few years in Barton and Finney Counties and PALE WESTERN CUTWORM collections extremely high in Finney and Stevens Counties, Kansas. CORN EARWORM heavy in corn in Wayne and Washtenaw Counties, Michigan. (pp. 977, 978).

SUGARCANE BORER widespread and heavy on corn and sorghum in lower Rio Grande Valley of Texas. (p. 978).

SOUTHERN CHINCH BUG heavy and damaging St. Augustine grass in Brazos County and a DELPHACID PLANTHOPPER severely stunted grasses in lower Rio Grande Valley of Texas. (p. 979).

ZEBRA CATERPILLAR larval migrations heavy in forage legumes in Lyon County, Nevada. (p. 979). LYGUS BUGS heavy in alfalfa in Graham County, Arizona. (p. 980).

STRAWBERRY ROOT APHID heavy on strawberry plantings in Napa County, California. (p. 984).

SADDLED PROMINENT defoliation reported on 1,500 acres of deciduous forest trees in Wayne County, Pennsylvania. (p. 985).

Total of 796 SCREW-WORM cases reported in southwest U.S. October 6-12. HORN FLY heavy on cattle in Kinney County, Texas, and in Woodward and Major Counties, Oklahoma. (p. 986).

WEST INDIAN SUGARCANE ROOT BORER adult damage serious on commercial citrus grove near previously reported infestation in Orange County, Florida. (p. 987).

Detection

A CARPENTER ANT collected at naval ammunition depot in Mineral County, Nevada. (p. 983).

New State records include a LADY BEETLE in Washington and a MYMARID WASP in Indiana. (p. 987).

For new county records see page 983.

Special Reports

Survey Methods. Selected References 1956. Part XII. (pp. 990-996).

Imported Fire Ant Quarantine Map. Centerfold.

Reports in this issue are for week ending October 11 unless otherwise indicated.

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WEATHER BUREAU'S 30-DAY OUTLOOK

MID-OCTOBER TO MID-NOVEMBER 1968

The Weather Bureau's 30-day outlook calls for temperatures to average below seasonal normals over the southern portion of the Nation lying between the Appalachians and the southern Plateau region. Above normal averages are expected along the Atlantic seaboard and in the Great Lakes region. In unspecified areas, near normal temperatures are indicated although with large intramonthly fluctuations. Precipitation is expected to exceed normal over most of the eastern half of the Nation and also over the Pacific Northwest. Subnormal amounts are indicated for the far southwestern and western portions of the northern Plains. Elsewhere, near normal precipitation is indicated.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$5.00 a year.

WEATHER OF THE WEEK ENDING OCTOBER 14

HIGHLIGHTS: Typical autumn weather. Cold Canadian air brought freezing temperatures to the intermountain region and most of the Rockies as gulf air struggles to continue the mild weather over mid-America. A Pacific storm brought the first general rains to California and snows to the western mountains.

PRECIPITATION: Light snow fell in the northern and central Rockies early in the week. Much of the snow melted as it fell but by 8 a.m. Tuesday, 1 inch had accumulated at Laramie, Wyoming. Snow fell Tuesday afternoon at Denver and Colorado Springs, Colorado. More cool, wet weather moved into the Pacific Northwest over the weekend. Substantial rains fell along the Washington and Oregon coast with snow above 4,000 feet. The wet weather spread southward bringing the first general rains of the season to California with snow above 8,000 feet. By Sunday the storm extended across the northern Rockies and was leaving a blanket of snow in the higher elevations. Heavy thunderstorms occurred from eastern Texas to the middle Mississippi River Valley Tuesday afternoon and early Wednesday. A few twisters occurred in Texas and the torrential rains caused a quick rise in the streams in Oklahoma and Missouri. Rains in the Southeast came early in the week with South Carolina benefiting from the first general precipitation in 2 months. Light rain fell in the Great Lakes region and the Ohio River Valley at midweek. New England received general rains on the 7th with additional showers on the 10th. Weather of the week continued on page 988.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

GREENBUG (*Schizaphis graminum*) - TEXAS - Found in 26 panhandle counties surveyed September 25 to October 9, 1968. Populations generally one per linear foot of planted row or square foot of volunteer wheat, or less. Ranged 1-5 per foot in Deaf Smith, Castro, Briscoe, and Donley Counties, 0-10 per foot in Swisher, Floyd, and Randall Counties. None found on small wheat. *S. graminum* not found on grain sorghum although this host still green. Few found on western wheatgrass. *Hippodamia convergens* generally light; decreased greatly past month. Flea beetles present in all fields surveyed. (Daniels). OKLAHOMA - Averaged 5 per row foot in field of volunteer wheat in Tillman County; negative in 2 other fields. Very light in wheat in eastern half of State. (Okla. Coop. Sur.). KANSAS - Trace to light, 1-25 per row foot, in all wheat checked in Thomas, Wallace, Wichita, Scott, Kearney, and Finney Counties. Heaviest in Wallace County; no damage noted. (Simpson). NEBRASKA - Light, ranged 3-7 per row foot, in 2 Lancaster County wheatfields. (Keith). SOUTH DAKOTA - Damage serious on 30-acre field of winter wheat near Ottumwa, Haakon County. Lady beetle adults and pupae in field. Controls recommended. (Peterson).

ARMY CUTWORM (*Chorizagrotis auxiliaris*) - KANSAS - Moths much heavier this year at Garden City, Finney County, and Great Bend, Barton County, than in last few years. (Simpson). TEXAS - Heavy damage by probably this species on turf of local golf course at Fort Stockton, Pecos County. (Neeb).

CORN EARWORM (*Heliothis zea*) - TEXAS - Infestations ranged 10-40 percent in 6 fields of field or sweet corn in 6 panhandle counties September 25 to October 7. (Daniels). ARKANSAS - Larvae light and feeding on immature sunflower seeds in Jackson County; 2 per head highest count; 2.5-3.0 percent of heads infested. Some plants in late-bloom stage. (Boyer, Oct. 4). NEBRASKA - Few larvae remain in corn in Cuming County. (Hill, Keith). Larvae averaged 1-2 per 60 sweeps on alfalfa in Lancaster County. (Keith). MICHIGAN - Heavy in many cornfields in Wayne and Washtenaw Counties; mostly limited to green late-planted fields. (Janes, Oct. 8).

CORN LEAF APHID (*Rhopalosiphum maidis*) - WISCONSIN - Still evident on late green corn in southern counties. (Wis. Ins. Sur.). MARYLAND - Light on 100 acres of sorghum near Benedict, Charles County, and on 50 acres of sorghum near Wagners Crossroads, Washington County; feeding continues near Benedict. (U. Md., Ent. Dept.).

POTATO LEAFHOPPER (*Empoasca fabae*) - WISCONSIN - Nymphs averaged 25 per sweep in few alfalfa fields in State. (Wis. Ins. Sur.; Oct. 4).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - IDAHO - First seasonal activity October 2 on seedling alfalfa field in Arena Valley near Parma, Canyon County; 1-2 per leaf killed 10 percent and severely weakened 40 percent of plants. (Waters). ARIZONA - Counts per 100 sweeps in alfalfa averaged 350 in many fields in Mesa area, Maricopa County, and 180 in one field at Yuma, Yuma County. (Ariz. Coop. Sur.). NEW MEXICO - Very light in all alfalfa-growing areas. (N.M. Coop. Rpt.). OKLAHOMA - Heavy numbers killed several fall-seeded alfalfa fields in Washita County; ranged 30-50 per 10 sweeps in Tillman County. (Okla. Coop. Sur.). KANSAS - Trace, 0-3 per 10 sweeps, in alfalfa field in Kearney County. (Simpson). ARKANSAS - Ranged 300-400 per 100 sweeps in alfalfa in Washington County. (Boyer). NEBRASKA - Ranged 0-14 (average 2-5) per 100 sweeps in 12 Dawson County alfalfa fields; egg-laying forms noted. (Manglitz, Oct. 4). VIRGINIA - Ranged 700-1,000 per 100 sweeps in 15-acre alfalfa field in Campbell County. (Allen).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - MICHIGAN - Survey revealed 75 percent of larvae in ears preparing for hibernation. (Janes, Oct. 8). WISCONSIN - Heavier on corn than in 1967 in eastern and central areas. Abundant in ears of field corn in south-central counties. *O. nubilalis* more numerous and damaging to corn ears than *Heliothis zea* in many fields. (Wis. Ins. Sur.). SOUTH DAKOTA - Fall abundance survey indicated little population fluctuation on corn in Beadle County compared with 1967, but marked increase in Kingsbury County. (Jones). NEBRASKA - Preliminary results of fall survey indicate sharp increase in populations on corn for 1968. (Keith).

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - TEXAS - Survey conducted on corn in 15 panhandle counties September 25 to October 7. Infestations ranged 30-90 percent on field corn in four most southern counties surveyed and 0-20 percent on field and sweet corn in remaining 11 counties. (Daniels). ARKANSAS - Much heavier in late corn than early planted corn in State. Lodged 0-40+ percent of stalks. (Boyer, Oct. 4). ILLINOIS - Larvae averaged 19.2 per 100 cornstalks during survey in Pulaski and Alexander Counties week ending September 27; total stalk infestation 21.6 percent; 4.8 percent of stalks lodged. Maximum stalk infestation one percent in 2 cornfields in Saline County. Collected by H.B. Petty September 24 at Ridgway, Gallatin County, for a new county record. (Ill. Ins. Rpt.).

SUGARCANE BORER (*Diatraea saccharalis*) - TEXAS - Widespread and heavy on corn and sorghum in lower Rio Grande Valley. Egg masses 1.4-5.4 per cornstalk and 1.5 per sorghum stalk. Up to 92 percent of stalks bored in some sorghum fields. (Schuster, Oct. 4).

NEOTROPICAL CORN BORER (*Diatraea lineolata*) - TEXAS - Widespread and medium on pretassel corn in lower Rio Grande Valley. Egg masses 0.1-0.9 per stalk in fields checked. (Schuster, Oct. 4).

FALL ARMYWORM (*Spodoptera frugiperda*) - TEXAS - Survey conducted on field and sweet corn in 15 panhandle counties September 25 to October 7. Infestations ranged 25-80 percent; generally, infestations heavier in southern section of area surveyed. (Daniels).

SORGHUM WEBWORM (*Celama sorghiella*) - MISSISSIPPI - General in late sorghum. Heavy infestation in Sharkey County required treatment last week. Moderate on Oktibbeha and Lowndes County sorghum. (Dinkins, Oct. 4).

WESTERN BEAN CUTWORM (*Loxagrotis albicosta*) - COLORADO - Larval infestation extensive on corn in southern Weld County; present in Logan County. (Boyes, Johnson).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - NEW HAMPSHIRE - Adults found September 13 at Stratham, Rockingham County; September 19 at Hopkinton, Merrimack County; and October 3 at Milford, Hillsborough County. All new county records. (Sutherland). MICHIGAN - Adults still prevalent in field corn in southern counties as of October 3. (Janes).

CORN ROOTWORMS (*Diabrotica* spp.) - NEBRASKA - Adults common in 8 cornfields surveyed in Cuming County; averaged about 1 per 10 plants. (Hill, Keith).

SMALL GRAINS

PALE WESTERN CUTWORM (*Agrotis orthogonia*) - KANSAS - Moth catches extremely high in blacklight traps last 2 weeks at Garden City, Finney County, and Hugoton, Stevens County. Moth collections high last fall at Garden City and resulting larval populations past spring high and extremely damaging. Counts this year at Hugoton 3 times higher than peak in 1967. Peak flight in 1968 nearly 4 weeks later than in 1967. (Simpson).

FALL ARMYWORM (Spodoptera frugiperda) - MISSISSIPPI - Light to moderate on small grains in Monroe, Oktibbeha, Hinds, and Rankin Counties. (Dinkins, Oct. 4).

APHIDS - KANSAS - Rhopalosiphum fitchii and Macrosiphum avenae trace in most wheat examined in Thomas, Wallace, Wichita, Scott, Kearney, and Finney Counties. R. rufiabdominalis light in all wheat examined in western third of State. (Simpson).

TURF, PASTURES, RANGELAND

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ALABAMA - Numerous older larvae almost destroyed stands of 2 to 3-inch ryegrass on 5 farms (about 250 acres) in Barbour County. Land previously in peanuts this season. Acreage to be replanted. (McQueen).

VELVETBEAN CATERPILLAR (Anticarsia gemmatilis) - ALABAMA - Caused some damage in field of 2 to 5-inch ryegrass at Foley, Baldwin County. Field adjoined heavily infested soybean field where older larvae migrating in search of food. (Wilson).

RED-LEGGED GRASSHOPPER (Melanoplus femurrubrum) - VIRGINIA - Adults, mostly this species, 1-2 per square yard on rangeland in southern Campbell County; no economic damage. (Allen, Rowell). ALABAMA - M. femurrubrum and other grasshoppers feeding on seedling crimson and white clover in pasture sod at several locations in Lee, Macon, and Tallapoosa Counties. (Barwood et al.).

A CRICKET (Nemobius fasciatus) - VIRGINIA - Adults up to 8-10 per square yard on pastureland in southern Campbell County. (Allen, Rowell). ALABAMA - Adults and nymphs numerous and feeding on seedling crimson and white clover in pasture sod at several locations in Lee, Macon, and Tallapoosa Counties. Acheta spp. also feeding. (Barwood et al.).

SOUTHERN CHINCH BUG (Blissus insularis) - TEXAS - Heavy, damaging St. Augustine grass at Bryan, Brazos County. (Green).

A DELPHACID PLANTHOPPER (Delphacodes propinqua) - TEXAS - Heavy, severely stunted Coastal Bermuda and star grass in lower Rio Grande Valley. (Schuster, Oct. 4).

RHODES-GRASS SCALE (Antonina graminis) - CALIFORNIA - Light to heavy on Bermuda grass locally at Indio, Riverside County. (Cal. Coop. Rpt.).

A MARCH FLY (Dilophus orbatus) - CALIFORNIA - Adults heavy on lawns at San Francisco, San Francisco County, and Los Altos and Cupertino, Santa Clara County; very annoying to homeowners. (Cal. Coop. Rpt.).

FORAGE LEGUMES

BEEF ARMYWORM (Spodoptera exigua) - ARIZONA - Ranged 20-1,800 per 100 sweeps in alfalfa at Yuma, Yuma County. Healthy larvae averaged 100 per 100 sweeps in alfalfa in Maricopa County; many other larvae diseased. (Ariz. Coop. Sur.).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - ARIZONA - Averaged 250 per 100 sweeps in alfalfa in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

BERTHA ARMYWORM (Mamestra configurata) - WASHINGTON - Heavy on alfalfa near Prosser, Benton County. (Gerlitz, Retan, Oct. 4).

ZEBRA CATERPILLAR (Ceramica picta) - NEVADA - Larval migrations heavy in forage legumes in Smith and Mason Valleys, Lyon County; numerous on roads. (Alcorn).

ALFALFA CATERPILLAR (*Colias eurytheme*) - ARIZONA - Counts per 100 sweeps in alfalfa averaged 135 at Yuma, Yuma County, and 100 in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.). NEW MEXICO - Light in alfalfa around Espanola, Rio Arriba County. (Heninger).

A WALSHIID MOTH (*Walshia misecolorella*) - NEBRASKA - Collected 2 larvae in roots of volunteer sweetclover along roadside near Cairo, Hall County. This is a new county record. (Manglitz, Oct. 4).

PEA APHID (*Acyrtosiphon pisum*) - MISSISSIPPI - Adults and nymphs averaged 25 per 100 sweeps in Oktibbeha County alfalfa. (Dinkins). KANSAS - Light, 10-15 per 10 sweeps, in alfalfa in Kearney County. (Simpson). NEBRASKA - Ranged 5-416 per 100 sweeps in 12 Dawson County alfalfa fields. (Manglitz, Oct. 4). NEW MEXICO - Generally light in alfalfa over most of State. (N.M. Coop. Rpt.). UTAH - Ranged 50-500 per 10 sweeps in succulent alfalfa growth at Willard, Box Elder County, and Ogden, Weber County. (Knowlton, Oct. 8).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Average per 100 sweeps in alfalfa by county: Pinal, 125 at Casa Grande; Maricopa, 90 in Salt River Valley; Yuma, 465 at Yuma. (Ariz. Coop. Sur.). OKLAHOMA - Averaged 40 per 100 sweeps in alfalfa in Tillman County. (Okla. Coop. Sur.). MISSISSIPPI - Averaged 10 per 100 sweeps on Oktibbeha County alfalfa. (Dinkins).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Heavy in all alfalfa in Safford area, Graham County. Counts per 100 sweeps in alfalfa averaged 30 at Casa Grande, Pinal County, and 200 at Yuma, Yuma County. (Ariz. Coop. Sur.).

TARNISHED PLANT BUG (*Lygus lineolaris*) - MICHIGAN - Collected 187 in 200 sweeps in Lenawee County alfalfa field October 3. (Janes). ARKANSAS - Ranged 50-75 per 100 sweeps in alfalfa in Washington County. (Boyer). WISCONSIN - Adults averaged about 5 per sweep in central area alfalfa. (Wis. Ins. Sur.).

ALFALFA WEEVIL (*Hypera postica*) - NEBRASKA - Collected one larva in 1,200 sweeps in 12 Dawson County alfalfa fields. (Manglitz, Oct. 4). ARKANSAS - Survey negative in Washington County. (Boyer).

GRASSHOPPERS (*Melanoplus* spp.) - PENNSYLVANIA - *M. femurrubrum* and *M. differentialis* caused browning of crown vetch along State Highway 72 in Lebanon County October 3. Determined by E.E. Simons. (Jeffery, Rhoads).

SOYBEANS

VELVETBEAN CATERPILLAR (*Anticarsia gemmatilis*) - ALABAMA - Populations and damage varies in Mobile, Baldwin, and Marengo Counties. (Seibels et al.). Comprised 98 percent of leaf feeders that destroyed 95+ percent of 130-acre field at Foley, Baldwin County. Few pods turning brown. Controls applied, but doubtful whether harvest worthwhile. (Wilson).

NOCTUID MOTHS (*Heliothis* spp.) - ALABAMA - Larvae light to medium in all immature fields surveyed at Foley, Baldwin County. Several thousand acres received one insecticide application; many acres treated 3 times. (Wilson).

YELLOW-STRIPED ARMYWORM (*Prodenia ornithogalli*) - ALABAMA - This species and other leaf feeders light to medium at Foley, Baldwin County. Damaging numbers usually rare on soybeans except in extreme southwest area. (Wilson et al.).

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - VIRGINIA - Populations much below 1967 in Holland area; damage noneconomic. Situation much better than in 1967 in Nansemond and surrounding counties. (Smith). Soybeans beyond economic damage in Westmoreland County. (Ptucha). ALABAMA - Present in most soybean fields, but damaging only in untreated home gardens at Foley, Baldwin County. (Wilson).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MISSISSIPPI - Adults moderate, feeding on foliage of 3 late-planted Yazoo County fields. (Dinkins).

COTTON

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Activity increased past week in Martin County. Light in Midland County; medium to heavy in Glasscock and Reagan Counties. (Neeb, Oct. 4). OKLAHOMA - Infested 10 percent of late crop in Ellis County. (Okla. Coop. Sur.).

BOLLWORMS (Heliothis spp.) - MISSISSIPPI - H. zea and H. virescens heavy in some late Yazoo County fields; some damage to young bolls. (Dinkins, Oct. 4). TEXAS - H. zea and H. virescens activity generally light in Trans-Pecos area past week. Of 85 larvae examined in El Paso County, 83 determined H. virescens. (Neeb, Oct. 4). ARIZONA - H. zea light in large green bolls at Queen Creek, Maricopa County. (Ariz. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Larvae 3-4 per plant at Safford, Graham County. (Ariz. Coop. Sur.).

FALL ARMYWORM (Spodoptera frugiperda) - MISSISSIPPI - Light in De Soto County; some feeding. (Dinkins, Oct. 4).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Light in Salt River Valley, Maricopa County, and in Gila Valley, Graham County. (Ariz. Coop. Sur.).

COTTON APHID (Aphis gossypii) - NEW MEXICO - Heavy in one field of late export cotton in Luna County; honeydew also heavy. (Campbell). Increasing north of Hatch in northern Dona Ana County. (Elson).

SUGARBEETS

BERTHA ARMYWORM (Mamestra configurata) - WASHINGTON - Heavy near Prosser, Benton County. (Gerlitz, Retan, Oct. 4).

MISCELLANEOUS FIELD CROPS

SUNFLOWER MOTH (Homoeosoma electellum) - ARKANSAS - Earlier this season, larvae up to 75-80 per sunflower head in early Jackson County fields. This week, larvae never more than 1 per head in 2 late Jackson County fields. Infested only about 2 percent of heads. Latter 2 fields planted July 20. (Boyer, Oct. 4).

POTATOES, TOMATOES, PEPPERS

BERTHA ARMYWORM (Mamestra configurata) - WASHINGTON - Heavy in late potatoes near Prosser, Benton County. (Gerlitz, Retan, Oct. 4).

EUROPEAN CORN BORER (Ostrinia nubilalis) - ALABAMA - Larvae continue light on pimiento peppers in Sand Mountain area. Good control efforts and selective harvesting practically eliminated damaged peppers reaching market. Yield loss light. (Leeper et al.).

GENERAL VEGETABLES

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Treatments continue on lettuce at Yuma, Yuma County. (Ariz. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Larvae up to 7 per plant in small lettuce field in Mesa area, Maricopa County; treatments continue on lettuce in Cochise, Maricopa, Pima, Pinal, and Yuma Counties. (Ariz. Coop. Sur.).

NOCTUID MOTHS - MICHIGAN - Abnormally high in Montcalm County blacklight trap past week; collected 174 Amathes c-nigrum, 434 Agrotis ipsilon, and 419 Peridroma saucia. Larvae could be serious problem next spring. Emergence pattern prolonged due to mild fall temperatures and no killing frosts. Mildness or severity of coming winter could alter prediction considerably. (Janes, Oct. 8).

DECIDUOUS FRUITS AND NUTS

SHOT-HOLE BORER (Scolytus rugulosus) - WASHINGTON - Second-generation emergence from stone fruits in upper Yakima Valley at or near peak on September 26. (Johnson).

PEAR-SLUG (Caliroa cerasi) - UTAH - Conspicuously marking plum, prune, and cherry foliage at Willard and Brigham City, Box Elder County. (Knowlton, Oct. 8).

APHIDS - NEW MEXICO - Eriosoma lanigerum light to heavy in apple orchards at Santa Cruz, Santa Fe County. (Heninger). OREGON - Large numbers of E. pyricola alates flying in young pear orchard near Jacksonville, Jackson County. (Larson). WASHINGTON - First massive fall flight of Myzus persicae in Yakima County September 30. (Johnson). UTAH - Myzocallis coryli making ornamental hazelnut foliage and soil beneath extremely sticky at Logan, Cache County. (Knowlton, Oct. 8). ALABAMA - Myzocallis caryaefoliae leaf damage heavy throughout unsprayed pecan orchards in Barbour County. (Leeper, Walton).

A LEAPHOPPER (Keonolla confluens) - WASHINGTON - Large concentrations of adults feeding on peach; up to 25 adults per peach leaf September 30 in Yakima County. (Johnson).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - INDIANA - During past week at Vincennes, 36 virgin female traps (10 females per trap) caught 187 males, about third of number caught week before. Adult activity low. (Dolphin, Oct. 7).

LESSER PEACH TREE BORER (Synanthedon pictipes) - INDIANA - Seasonal adult activity about over at Vincennes; virgin female traps caught 25 males. (Dolphin, Oct. 7).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - INDIANA - Adults in bait jars at Vincennes dropped to low level (18). (Dolphin, Oct. 7).

CODLING MOTH (Carpocapsa pomonella) - INDIANA - Adults still low at Vincennes. Sex lure traps caught 7 males (10 previous week). Full-grown larvae leaving fruit to pupate. (Dolphin, Oct. 7). CALIFORNIA - Medium on crab apple trees at Napa, Napa County. (Cal. Coop. Rpt.).

APPLE MAGGOT (Rhagoletis pomonella) - INDIANA - Stickyboard captures of adults at Vincennes progressively decreasing each week from 160 to 31 to 15. Prepupae still leaving apples. (Dolphin, Oct. 7).

ORCHARD MITES - NEW MEXICO - Moderately light to heavy on apples at Santa Cruz, Santa Fe County; leaf burn noted. (Heninger). UTAH - Tetranychus spp. webbing and numbers conspicuous from lower crotches of apple trees to soil level in Weber County orchards. (Knowlton, Oct. 8). WISCONSIN - Panonychus ulmi higher than normal and difficult to control this season, according to one Green County fruit grower. (Wis. Ins. Sur., Oct. 4). CALIFORNIA - Aceria brachytarsus medium on black walnut leaves in Fair Oaks, Sacramento County. (Cal. Coop. Rpt.).

PECAN WEEVIL (*Curculio caryae*) - TEXAS - Heavy with much late damage to pecans near Stephenville, Erath County. (Hancock, Van Cleave). MISSISSIPPI - Light in pecan grove in Oktibbeha County; damaged an estimated 5 percent of nuts. (Dinkins). ALABAMA - Older larvae light in pecans under isolated trees in Barbour County. No emergence holes yet but expected soon. (Leeper, Walton).

TWIG GIRDLER (*Oncideres cingulata*) - ALABAMA - Scattered twig cutting and egg laying on hickory, persimmon, and pecan trees in Macon, Tallapoosa, Coosa, Autauga, and Chilton Counties. (Barwood).

WALNUT CATERPILLAR (*Datana integerrima*) - OKLAHOMA - Heavy on Noble County pecan trees. (Okla. Coop. Sur.).

WALNUT HUSK FLY (*Rhagoletis completa*) - OREGON - Infested 90 percent of several black walnut trees at Hermiston, Umatilla County; larvae averaged 25 per fallen fruit. (Westcott, Sept. 20).

A COREID BUG (*Hyalymenus tarsatus*) - TEXAS - Moderate, damaging pecans near Goliad, Goliad County; detected on nut clusters. (Hajdik).

INSECT DETECTION

A CARPENTER ANT (*Camponotus variegatus hawaiiensis* Forel) - NEVADA - Taken from empty powder cans at naval ammunition depot, Hawthorne, Mineral County, by H. Reynolds June 27, 1968. Determined by D.R. Smith. Infestation originally found in large shipping unit containing ammunition boxes and other equipment. Unit originated from overseas and was fumigated 4-6 hours after arrival at depot; surrounding area was treated also. When unit was first opened, prior to treatment, numerous winged forms flew from site. Whether these reproductive forms will survive and become established in area is not known. (Bechtel).

New State Records

A LADY BEETLE (*Scymnus intrusoides*) - WASHINGTON - In trap 0.5 mile north of George, Grant County, September 9, 1968. Collected by B.J. Landis. Determined by M.H. Hatch. (p. 987).

A MYMARIID WASP (*Gonatocerus mexicanus*) - INDIANA - Female collected on farm at New Carlisle, St. Joseph County, August 28, 1968, by T.L. Burger. Determined by B.D. Burks. (p. 987).

New County Records

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - ILLINOIS - Gallatin County. (p. 978).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - NEW HAMPSHIRE - Hillsborough, Merrimack, and Rockingham Counties. (p. 978).

A WALSHIID MOTH (*Walshia misecolorella*) - NEBRASKA - Hall County. (p. 980).

SPRUCE NEEDLE MINER (*Taniva albolineana*) - OHIO - Hamilton County. (p. 985).

A WHITE-FRINGED BEETLE (*Graphognathus leucoloma striatus*) - MISSOURI - New Madrid and Pemiscot Counties. (p. 987).

CORRECTIONS

CEIR 18(40):950 - HEMIPTEROUS PREDATORS - ARIZONA - ...*Orius* spp., 30 at Bonita, Cochise County, should read...30 at Bonita, Graham County...(Ariz. Coop. Sur.).

CITRUS

Citrus Insect Situation in Florida - End of September - CITRUS RUST MITE (*Phyllocoptruta oleivora*) infested 52 percent of groves (norm 57 percent); 30 percent economic (norm 35 percent). Decreased to normal September level at midmonth and remained in low range until end of month. Increase expected through October. Will be heavy on fruit in about 25 percent of groves. Highest districts west, south, and north. TEXAS CITRUS MITE (*Eutetranychus banksi*) infested 10 percent of groves (norm 17 percent); less than 1 percent economic (norm 4 percent). At lowest September level since 1955. Increase expected in late October but expected to continue in low range in all districts. Highest district north. CITRUS RED MITE (*Panonychus citri*) infested 12 percent of groves (norm 24 percent); less than 1 percent economic (norm 4 percent). Population lowest for September in 18 years of record; will remain low despite gradual increase expected in October. Highest district east. BLACK SCALE (*Saissetia oleae*) infested 35 percent of groves (norm 38 percent); 13 percent economic (norm 15 percent). Dropped out of high range early in September; in normal low range by end of month. Little change expected. Highest district east. GLOVER SCALE (*Lepidosaphes gloverii*) infested 28 percent of groves (norm 56 percent); 1 percent economic (norm 9 percent). Populations lowest for September since 1961; will remain below average and in low range through October. Highest district west. PURPLE SCALE (*L. beckii*) infested 16 percent of groves (norm 50 percent); less than 1 percent economic (norm 2 percent). At lowest September level in 18 years of record. Will continue very light in all districts. CHAFF SCALE (*Parlatoria pergandii*) infested 9 percent of groves (norm 35 percent); less than 1 percent economic (norm 3 percent). Population lowest for September since June 1951. Will continue very low. YELLOW SCALE (*Aonidiella citrina*) infested 32 percent of groves (norm 49 percent); less than 1 percent economic (norm 7 percent). Much below normal and at lowest September level since 1961. Little change expected. AN ARMORED SCALE (*Unaspis citri*) infested 13 percent of groves; 1 percent economic. Activity diminished in September but expected to intensify in October. WHITEFLIES infested 52 percent of groves; 14 percent economic. Increasing but expected to remain near moderate level normal for October. Adults will be less numerous. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

SMALL FRUITS

A LEAF ROLLER MOTH (*Platynota stultana*) - CALIFORNIA - Larvae heavy on grape plantings at Famoso, Kern County. (Cal. Coop. Rpt.).

STRAWBERRY ROOT APHID (*Aphis forbesi*) - CALIFORNIA - Nymphs and adults heavy on strawberry plantings at Napa, Napa County. (Cal. Coop. Rpt.).

ORNAMENTALS

BAGWORM (*Thyridopteryx ephemeraeformis*) - ALABAMA - Many bags filled with eggs observed on cedar trees, arborvitae, junipers, and some deciduous trees in much of central and northern areas. Smaller, scattered infestations in parts of southern area. (McQueen).

ARMORED SCALES - TEXAS - *Fiorinia theae* and *Unaspis euonymi* numerous on ornamentals examined in Nacogdoches, Angelina, and Smith Counties. (Thomas). OKLAHOMA - U. euonymi egg hatch complete, crawlers active on euonymus checked in Stillwater, Payne County. (Okla. Coop. Sur.).

HARLEQUIN BUG (*Murgantia histrionica*) - TENNESSEE - Nymphs congregating under shrubs near houses, causing concern in some areas of Davidson County. (Quillin, Oct. 2).

SPIDER MITES - NEW MEXICO - *Tetranychus* spp. heavy on arborvitae, ornamental junipers, palms, gardenias, gladioli, and cannas at Espanola, Rio Arriba County, and Sante Fe, Santa Fe County. (Heninger). CALIFORNIA - *Eurytetranychus buxi* heavy on Buxus japonica plants at Redlands, San Bernardino County. (Cal. Coop. Rpt.).

FOREST AND SHADE TREES

WHITE-PINE WEEVIL (Pissodes strobi) - WEST VIRGINIA - Infested 75 percent of white pine in 3-acre stand in Upshur County. Adults collected September 25. (W. Va. For. Ins. and Dis. Det.).

PINE ENGRAVER (Ips pini) - WISCONSIN - Egg laying underway August 14; larvae and pupae present by September 12 and adults by mid-September in red pine pulpwood in southern Columbia County. Secondary borers became active by latter date. (Wis. Ins. Sur.).

RED-HEADED PINE SAWFLY (Neodiprion lecontei) - WEST VIRGINIA - Defoliation up to 80 percent on small number of Virginia and Scotch pines in Lewis County September 26. (W. Va. For. Ins. and Dis. Det.).

SPRUCE NEEDLE MINER (Taniva albolineana) - OHIO - Heavy on blue spruce near Miami-town in Hamilton County for a new county record. (Cooley). Previously reported from many areas of State, especially central and southern sections. (PPC).

SADDLED PROMINENT (Heterocampa guttivitta) - PENNSYLVANIA - Defoliation 50+ percent on about 1,500 acres of deciduous forest trees in Wayne County September 25. Collected 62 live pupae in area. (Rhodes).

FALL WEBWORM (Hyphantria cunea) - NEW MEXICO - Damage heavy on numerous trees throughout State. (N.M. Coop. Rpt.).

FALL CANKERWORM (Alsophila pomataria) - WISCONSIN - Adults emerging and laying eggs on Chinese elm in northern Dane County past weekend. (Wis. Ins. Sur., Oct. 4).

TWIG GIRDLER (Oncideres cingulata) - TEXAS - Much damage to shade trees in central area. Much activity noted at Groesbeck, Limestone County. (Texas Coop. Rpt.).

ELM LEAF BEETLE (Pyrrhalta luteola) - TENNESSEE - Damaging elm in western area. (Roberts, Berrier, Oct. 4).

Aphids on Juglandaceae in Maryland and the District of Columbia in 1968 - Adult stem mothers of Monellia microsetosa, Monelliopsis nigropunctata, and Myzocallis caryaeifoliae had appeared on hickory trees at the National Arboretum in Washington, D.C., April 18. This is the earliest on record that adult stem mothers of the 3 species have been taken in the area at College Park, Maryland. Monellia costalis adults appeared April 24 and Protopterocallis canadensis adults appeared on April 27. On May 4 Monellia microsetosa was abundant enough to produce a conspicuous quantity of honeydew on Carya glabra at the National Arboretum. On black walnut Monelliopsis caryae stem mother adults appeared April 30 at College Park and the species was abundant by May 9. About 60 adults and 100 nymphs of Monelliopsis nigropunctata were found on two leaflets of Carya ovata in Garrett County on September 19. The same leaves, also infested with mites, were visibly whitened. From July through September, aphids were scarce (with the exception of the one collection of M. nigropunctata just noted) in the following areas: St. Marys, Prince Georges, and Garrett Counties, Maryland, and the District of Columbia. During nearly 6 hours actual collecting time on hickories and black walnut a total of only 139 young and adult aphids were found. These included three species of Monellia, three species of Monelliopsis, one species of Myzocallis, and two species of Protopterocallis. (T.L. Bissell).

PAINTED MAPLE APHID (Drepanaphis acerifoliae) - ARKANSAS - Increased rapidly on red maple at Fayetteville, Washington County; up to 100 or more per leaf; only 5-10 percent alates. (Boyer).

A LEAFHOPPER (Keonolla confluens) - WASHINGTON - Large concentrations of adults feeding on sycamore and willow at Yakima, Yakima County. (Johnson, Sept. 30).

A FALSE SPIDER MITE (Brevipalpus cardinalis) - ARIZONA - Moderate on ash trees in

Salt River Valley, Maricopa County. Collected by J. May. Determined by D. Tuttle. (Ariz. Coop. Sur.).

MAN AND ANIMALS

MOSQUITOES - MINNESOTA - Some daytime nuisance activity still reported on warm days. In final light trap collections for season during September 21-27: Aedes vexans predominant with 477, Culiseta inornata 171, Uranotaenia sapphirina 164, Culex territans 72, and Anopheles walkeri 52. Hatch 17 percent in eggs submerged in laboratory September 25; 11 percent on October 2 (Minn. Ins. Rpt.).

SCREW-WORM (Cochliomyia hominivorax) - Total of 796 cases reported in U.S. October 6-12 as follows: TEXAS - Aransas 1, Atascosa 9, Bandera 3, Bee 5, Bexar 11, Brewster 7, Brooks 34, Brown 1, Burnet 3, Caldwell 1, Callahan 2, Cameron 4, Coleman 3, Comal 5, Comanche 2, Concho 4, Crockett 22, De Witt 8, Dimmit 18, Duval 11, Ector 1, Edwards 29, Fisher 1, Frio 11, Gillespie 8, Goliad 5, Gonzales 3, Hays 6, Hidalgo 23, Howard 2, Irion 4, Jack 1, Jeff Davis 11, Jim Hogg 7, Jim Wells 14, Karnes 11, Kendall 2, Kenedy 2, Kerr 7, Kimble 4, Kinney 37, Kleberg 2, Lampasas 4, La Salle 15, Live Oak 8, Llano 3, McCulloch 2, Mason 9, Maverick 18, Medina 27, Menard 4, Midland 1, McMullen 6, Nolan 1, Nueces 2, Pecos 20, Presidio 11, Real 7, Reeves 2, Refugio 1, Runnels 3, San Patricio 5, San Saba 2, Schleicher 15, Starr 20, Sterling 3, Sutton 20, Swisher 1, Taylor 2, Terrell 34, Tom Green 8, Upton 2, Uvalde 45, Val Verde 68, Ward 2, Webb 20, Wharton 1, Willacy 1, Williamson 1, Wilson 16, Winkler 2, Zapata 9, Zavala 18; ARIZONA - Gila 1, Maricopa 3, Yavapai 1; CALIFORNIA - Riverside 3, San Diego 2; NEW MEXICO - Eddy 1, Otero 1. Total of 1,018 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Territorio sur de Baja California 104, Sonora 369, Chihuahua 191, Coahuila 185, Nuevo Leon 100, Tamaulipas 69. Total of 43 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 89,154,000; New Mexico 1,780,000; Arizona 9,640,000; California 1,800,000; Mexico 96,204,000. (Anim. Health Div.).

HORN FLY (Haematobia irritans) - TEXAS - Heavy on cattle near Brackettville, Kinney County. (Neeb, Oct. 4). OKLAHOMA - Ranged 1,000-1,200 per head on cattle in Woodward and Major Counties; moderate in Noble, Mayes, and Cleveland Counties. (Okla. Coop. Sur.). VIRGINIA - Generally light on Campbell County beef cattle. (Allen).

FACE FLY (Musca autumnalis) - VIRGINIA - Annoyed cattle in southern Campbell County. (Allen).

A LOUSE FLY (Pseudolynchia canariensis) - CALIFORNIA - Generally heavy in pigeon loft at Sacramento, Sacramento County; killing some squabs. (Cal. Coop. Rpt.).

HARD-BACKED TICKS - OKLAHOMA - Amblyomma americanum immatures continue numerous and annoying in scattered areas of Delaware and Cherokee Counties. Occasional adults of Dermacentor albipictus (winter tick) in Cherokee County. (Okla. Coop. Sur.).

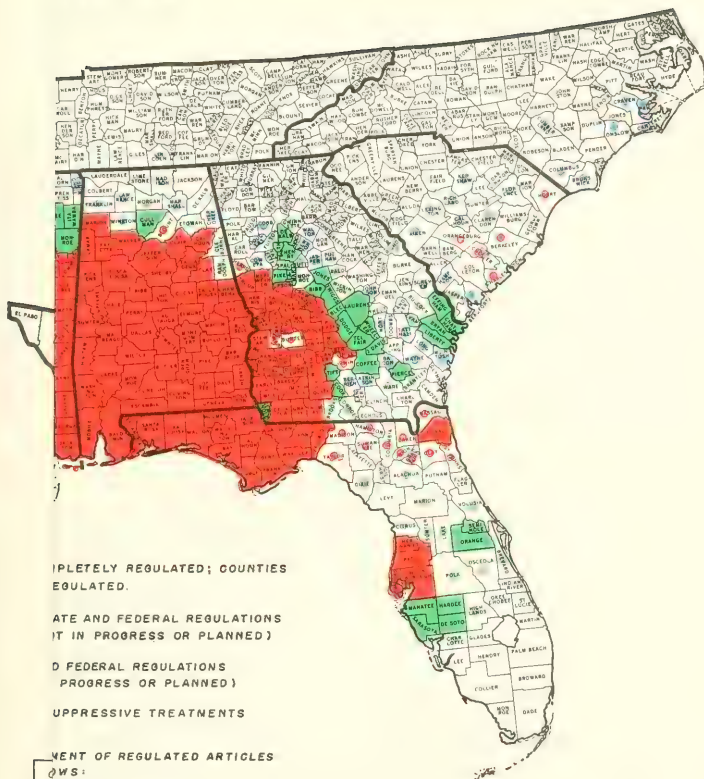
HOUSEHOLDS AND STRUCTURES

FIELD CRICKETS (Gryllus spp.) - TEXAS - Heavy on cattle near Brackettville, Kinney area, Bell County, and in Caldwell, Guadalupe, Lavaca, Gonzales, Karnes, and Wilson Counties. (McMenemy, Massey).

STORED PRODUCTS

RED FLOUR BEETLE (Tribolium castaneum) - ALABAMA - Medium to large numbers of this and Oryzaephilus surinamensis (saw-toothed grain beetle) in sacks of feed and in waste materials of feed mills in Lee, Macon, and Tallapoosa Counties. (Barwood).

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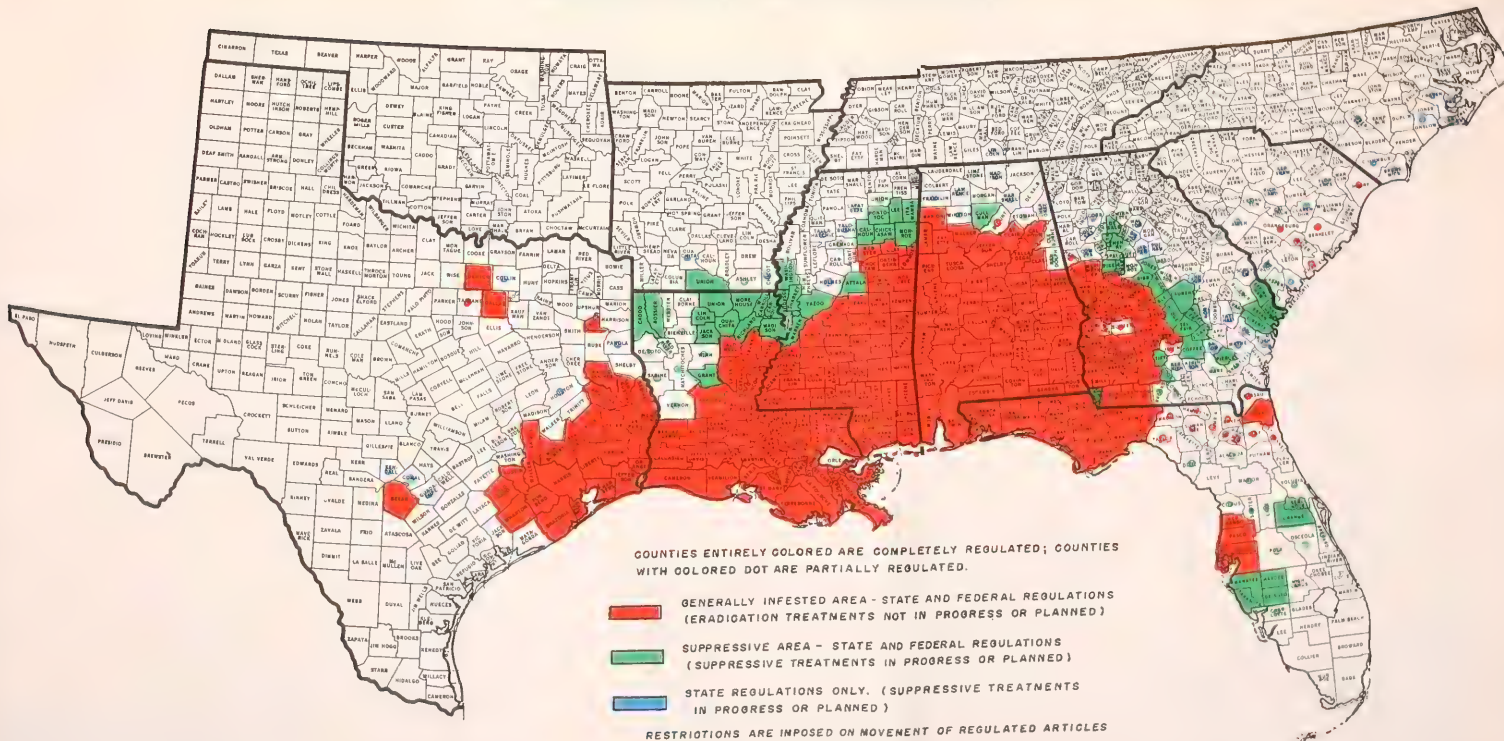
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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
COOPERATING WITH AFFECTED STATES

6 CERTIFICATION OF REGULATED ARTICLES.

Revised Aug. 15, 1968.

IMPORTED FIRE ANT QUARANTINE



CONSULT YOUR STATE OR FEDERAL PLANT PEST CONTROL INSPECTOR OR YOUR COUNTY AGENT FOR ASSISTANCE REGARDING EXACT AREAS UNDER REGULATION AND REQUIREMENTS FOR MOVING REGULATED ARTICLES.

RESTRICTIONS ARE IMPOSED ON MOVEMENT OF REGULATED ARTICLES FROM A REGULATED AREA AS FOLLOWS:

1. FROM RED INTO OR THROUGH GREEN, BLUE, OR WHITE.
2. FROM GREEN INTO OR THROUGH WHITE OR BLUE.
3. GREEN INTO GREEN.
4. WITHIN GREEN °
5. FROM BLUE INTO ANY OTHER AREA. °°

° IF REQUIRED BY AN AUTHORIZED INSPECTOR.
°° IF REQUIRED BY APPROPRIATE STATE QUARANTINE OR BY AN AUTHORIZED INSPECTOR.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
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SEE REVERSE SIDE FOR REQUIREMENTS CONCERNING CERTIFICATION OF REGULATED ARTICLES.

Revised Aug. 15, 1968.

THE FOLLOWING CROPS OR ARTICLES MUST BE MOVED UNDER CERTIFICATE OR
PERMIT YEAR-ROUND EXCEPT AS INDICATED:

1. Soil, compost, decomposed manure, humus, muck, and peat, separately
or with other things.

Soil samples of any size shipped to U.S. Army Corps of Engineers.
Soil Laboratories within the conterminous U.S. are exempt.
Soil samples of one pound or less are exempt if shipped to a

'DRUGSTORE BEETLE (Stegobium paniceum) - TENNESSEE - Damaging cornmeal at Bristol, Sullivan County. (Williams).

BENEFICIAL INSECTS

A LADY BEETLE (Scymnus intrusoides) - WASHINGTON - Taken in trap 0.5 mile north of George, Grant County, September 9, 1968. Collected by B.J. Landis. Determined by M.H. Hatch. This is a new State record. (Landis, Retan).

A MYMARID WASP (Gonatocerus mexicanus) - INDIANA - Female collected on farm at New Carlisle, St. Joseph County, August 28, 1968, by T.L. Burger. Determined by B.D. Burks. This is a new State record. (Maltby).

BIG-EYED BUGS (Geocoris spp.) - ARIZONA - Averaged 150 per 100 sweeps on alfalfa in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.). ARKANSAS - G. punctipes reproduction continues in green soybeans and late sunflowers in northeast area; adults and nymphs present. (Boyer, Oct. 4).

DAMSEL BUGS (Nabis spp.) - ARKANSAS - Active on late sunflowers and on green soybeans in northeast area. (Boyer, Oct. 4).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

COMSTOCK MEALYBUG (Pseudococcus comstocki) - CALIFORNIA - Infestations continuing but not spreading on mulberry trees in Porterville, Tulare County. Some parasites and predators active. Pseudaphycus malinus (an encyrtid wasp) disappeared after promising buildup this spring; apparently unable to withstand high summer temperatures and arid climate. (Cal. Coop. Rpt.).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - Released 595,277 sterile moths this week; number released well above average. Air drops made in all 4 Kern County drop zones. One marked moth recovered in drop zone I at Oildale and one, 3 miles east of east boundary of drop zone IV near Pentland. Latter find was first collection of a sterile moth 3 miles beyond border of drop zone. Recaptured 19 sterile moths to date. Regular release of 6,000 moths in Borrego Valley, San Diego County. Date of first collected moth in Kern County in 1967 has passed. (Cal. Coop. Rpt.). NEVADA - Male captures increased in sex lure traps in cotton in Pahrump Valley, Nye County. Collected 95 males in Pahrump Valley September 27 to October 2; collected 35 prior to this date. Collected 18 males in Moapa Valley, Clark County, October 4-8; 2 of specimens collected from sex lure traps in hollyhocks. (Bell, Yamashita). ARIZONA - Larvae light in lint cleaners in Graham County cotton gin. (Ariz. Coop. Sur.). NEW MEXICO - Late buildup in cotton areas of Eddy, Chaves, Dona Ana, Otero, and Luna Counties. (N.M. Coop. Rpt.). Late flights indicated by sex lure traps placed up and down Mesilla Valley, Dona Ana County. (Campbell, Elson). TEXAS - Increased activity in Trans-Pecos area week of October 4. Infested 12-15 percent of bolls in El Paso County fields; currently infests 5-10 percent of bolls in some Glasscock County fields. (Neeb).

WEST INDIAN SUGARCANE ROOT BORER (Diaprepes abbreviatus) - FLORIDA - Adult damage severe on citrus foliage, larvae girdling large citrus roots in young commercial grove near nursery where species previously reported in Orange County. Several hundred adults collected. (Woodruff et al., Oct. 4).

A WHITE-FRINGED BEETLE (Graphognathus leucoloma striatus) - MISSOURI - Adults on goldenrod and wild aster at Portageville, New Madrid County, and at Hayti, Pemiscot County. Collected by R. Thompson and R. House October 9. Determined by R.E. Warner. Both are new county records. (PPC).

THE FOLLOWING CROPS OR ARTICLES MUST BE MOVED UNDER CERTIFICATE OR PERMIT YEAR-ROUND EXCEPT AS INDICATED:

1. Soil, compost, decomposed manure, humus, muck, and peat, separately or with other things.

Soil samples of any size shipped to U.S. Army Corps of Engineers.

Soil Laboratories within the conterminous U.S. are exempt.

Soil samples of one pound or less are exempt if shipped to a designated laboratory.*

Compost, decomposed manure, humus, and peat are exempt** if dehydrated, ground, pulverized, or compressed.

2. Plants with roots with soil attached.

3. Grass sod.

4. Hay and straw.

5. Logs, pulpwood, and stumpwood.

Logs and pulpwood are exempt** provided the railroad loading site has been treated.

Stumpwood if free of excessive amounts of soil is exempt** provided the railroad loading site has been treated and the stumpwood is consigned to a designated plant.*

6. Used mechanized soil-moving equipment.

Used mechanized soil-moving equipment is exempt** if cleaned and repainted.

*Information as to designated laboratories and processing plants may be obtained from an inspector.

**Exempt if not exposed to infestation after cleaning or other prescribed handling.

HAWAII INSECT REPORT

Field Corn - SOUTHERN GREEN STINK BUG (Nezara viridula) adults and nymphs heavy at Waikiki, Hawaii Island. Adults of Trichopoda pennipes var. pilipes (a tachina fly) readily detected. (Kamii).

Turf, Pasture - Moths of a GRASS WEBWORM (Herpetogramma licarsisalis) annoying around homes at Paaui, Honokaa, and Kawaihae on Hawaii Island. Larvae averaged 25-30 per square foot of turf at Kawaihae. Larval activity increasing at Ripahulu and Hana, Maui: moderately damaged 75 acres of Kikuyu and crabgrasses. Light to moderate larval infestations reappearing in pastures and lawns in scattered areas of Oahu. (Kobayashi et al.).

Beans - BEAN FLY (Melanagromyza phaseoli) damaged about half of snap bean seedlings in gardens at Waikapu on Maui. Damage trace to light on snap and long beans at Waimanalo and Waianae on Oahu. (Ah Sam et al.).

Fruits, Ornamentals - CHINESE ROSE BEETLE (Adoretus sinicus) adults and foliar damage continue heavy on rose, apple, and grape at Makawao and lower Olinda on Maui. (Miyahira). COCONUT SCALE (Aspidiotus destructor) surveys indicate species widespread on coconut leaves on Oahu. Infestations light to moderate to date at Kailua, Kaneohe, Sand Island, Honolulu Airport and vicinity, Moanalua, Waimalu, Aiea Heights, Ewa, and Waianae. (Fluker, Beardsley).

Forest and Shade Trees - All stages of a BARK BEETLE (Xylosandrus compactus) light to heavy on following new hosts on Mt. Kaala, Oahu. Exotic plants infested were thimbleberry (Rubus rosaeifolius), lantana (Lantana camara var. aculeata), and butterflybush (Buddleia asiatica). Native trees infested were Perrottetia sandwicensis, Gouldia St.-Johnii, Coprosma sp., Pelea sp., and Antidesma platyphyllum. (Davis, Olson).

Beneficial Insects - Adults of a DUNG BEETLE (Copris incertus prociduus) ranged 10-15 per cow pad in pastures in South Kohala District on Hawaii Island and along Kaluapulani Gulch on Maui. (Yamayoshi et al.). Several adults of a SCIOMYZID FLY (Sepedon sauteri) noted on taro foliage at Keanae and Waihee, Maui; appears established in both areas. Flies last released on Maui in July 1968. (Miyahira).

Miscellaneous Pests - Chemical baits for GIANT AFRICAN SNAIL (Achatina fulica) continued at Kona on Hawaii Island and at Poipu and Wahiawa on Kauai. Five live juveniles collected during September at Kona. No live snails detected on Kauai. Close surveillance will be maintained during rainy season. (Yoshioka, Sugawa). First and second instars of a GRASSHOPPER (Oedaleus abruptus) numerous on short grass in localized areas at Hickam Air Force Base, Honolulu, Oahu. First incidence of heavy nymphal populations in treated areas. First heavy rains of year apparently triggered egg hatch. (Olson, Otsuka).

and 11th. A few snow flurries were noted in the higher mountains in northern New England on Friday. Widely scattered light showers fell in the Florida Peninsula on several days. Arizona and New Mexico and nearby portions of neighboring States received no rain or only very light sprinkles.

TEMPERATURE: As warm, moist air streamed northward over mid-America early in the week, much colder air plunged southward through the western interior. On Wednesday morning the temperature dropped to 9° at Evanston, Wyoming, and to 21° at Alamosa, Colorado. Mild weather continued over the south with afternoon readings in the 70's and 80's and early morning readings mostly in the 60's. Quick weekend warming occurred over the central Great Plains. Pierre, South Dakota, registered 86° and Fargo, North Dakota, 80° on Sunday afternoon. A warming trend occurred over the East with weekend temperatures over much of the Northeast reaching the 70's by Sunday afternoon. Cool weather persisted over the West, however, with most of the area from the Pacific Ocean to the western Great Plains in the north and to the Continental Divide in the south averaging below normal. Much of the Northwest averaged 4° to 8° below normal. The middle Mississippi River and the Ohio River Valleys also averaged slightly below normal. (Summary supplied by Environmental Data Service, ESSA).

LIGHT TRAP COLLECTIONS

Project Name	Project No.	Project Date	Project Type	Project Status	Project Location	Project Description	Project Details	Project Notes	Project Comments
FLORIDA									
Gainesville 10/7-10	BL	7							
Monticello 10/3-9	2BL	283							
KANSAS									
Colby 10/8	BL	2							
Hugoton 10/6	BL	8							
MISSISSIPPI									
Stonewille 10/5-11	2BL	11							
MISSOURI									
Fair Grove 10/3-9	45-81	2.0							
OHIO									
Wooster 9/31-10/6	1								
TEXAS									
Brownsville 10/5-11	2BL	27							
Waco 10/5-11	BL	11							

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Part XII

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG heavy on fall grain in Clark County, Nevada. (p. 999).

EUROPEAN CORN BORER fall abundance survey on corn indicates highest population ever recorded in Delaware; more numerous than in 1967 throughout Iowa. (p. 999).

WHEAT STEM SAWFLY stubble survey, completed in western North Dakota. LESSER CORNSTALK BORER destroyed some ryefields in Houston County, Alabama. (p. 1000).

ZEBRA CATERPILLAR infestation heaviest on alfalfa in over 14 years in Lyon County, Nevada. (p. 1001).

IMPORTED CABBAGEWORM extremely heavy on collards in several areas of Alabama; heavy infestation expected next week on cabbage and collards in Oktibbeha County, Mississippi. (p. 1002).

CABBAGE LOOPER treatments continue throughout lettuce-growing area of Arizona. (p. 1003).

FOREST TENT CATERPILLAR defoliation expected to be heavy on aspen in 1969 in International Falls area of Minnesota. (p. 1005).

Total of 1,019 SCREW-WORM cases in southwest U.S. October 13-19. HORN FLY heavy on cattle in Johnston and Cotton Counties, Oklahoma. (pp. 1005-1006).

Detection

A JAPANESE WEEVIL reported for first time in Nebraska. (p. 1006).

For new county records see page 1010.

Special Report

Estimated Losses and Production Costs Attributed to Insects and Related Arthropods in 19 States for 1967. (pp. 1012-1028).

Reports in this issue are for week ending October 18 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING OCTOBER 21

HIGHLIGHTS: Canadian cold brought a hard freeze to much of the West and interrupted the Indian Summer in the East. Heavy rains fell in mid-America and Hurricane Gladys drenched the Florida Peninsula and parts of the Carolinas.

PRECIPITATION: Precipitation in the Far West early and late in the week left several inches of rain along the Washington and Oregon coast with lesser amounts inland in Washington and Oregon and along the California coast. Snow accumulated to 30 inches above 5,500 feet in the Cascades. Only light rain fell along the eastern slopes of the Sierras and little or none in the deserts. Snow flurries fell in northern and central Rockies accumulating to 1 to 2 feet in the higher mountains in Wyoming but to only an inch or less at most low elevations. Heavy showers fell over parts of mid-America Tuesday and Wednesday with totals ranging from 2 to more than 6 inches scattered from the Oklahoma Panhandle to central Minnesota. Beresford, South Dakota, registered a weekly total of 7.50 inches. Hurricane Gladys drenched portions of Florida and the Carolinas. A weekend storm dampened the Northeast.

Weather of the Week continued on page 1010.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

BET LEAFHOPPER (*Circulifer tenellus*) - ARIZONA - Averaged 200 per 100 sweeps in sugarbeets at Cochise, Cochise County. (Ariz. Coop. Sur.).

CORN EAWORM (*Heliothis zea*) - CALIFORNIA - Larvae heavy in okra pods at Empire, Stanislaus County. (Cal. Coop. Rpt.). IOWA - Fall survey completed October 5. State average showed 8.4 percent of corn ears infested; heaviest infestations (34 percent) in northwest area. (Gunderson). MICHIGAN - Moths in flight during daytime in most corn; larval infestation 70 percent in some fields, particularly in small green nubbins. All instars present. (Janes, Oct. 15).

CORN LEAF APHID (*Rhopalosiphum maidis*) - NEBRASKA - Ranged 35-65 per row foot in 6 wheatfields in Adams County; no visible damage. (Andersen). Few remain on late corn in Cuming County. (Keith, Hill, Oct. 11). OKLAHOMA - Ranged up to 20 per clump in volunteer wheat in Logan County; trace numbers in planted wheat. Ranged up to 500 per head in late grain sorghum heads checked in Payne County. (Okla. Coop. Sur.). ARIZONA - Counts per plant averaged 10 in 60-acre cornfield and 50 in 160-acre sorghum field in Stewart District, Cochise County. (Ariz. Coop. Sur.). CALIFORNIA - Damaging sorghum plantings in field test station at Holtville, Imperial County. (Cal. Coop. Rpt.).

GREENBUG (*Schizaphis graminum*) - NEBRASKA - Light, 6-23 per row foot, in 6 wheatfields in Adams County. Remains noneconomic; some leaf stippling. More abundant in volunteer wheat. (Andersen). COLORADO - Negative on wheat checked in northeastern area. (Johnson). KANSAS - Negative in wheat checked in McPherson, Cowley, and Sumner Counties. (Redding). OKLAHOMA - Ranged 15-20 per small clump in volunteer wheat and 1 per row foot in planted wheat in Logan County. Light in volunteer wheat and Johnson grass in Washita County. Averaged 1.5 per row foot in volunteer wheat in Kiowa County. (Okla. Coop. Sur.). NEW MEXICO - Light and spotty on wheat in Quay, Curry, and Roosevelt Counties. (Durkin, Mathews). NEVADA - Heavy on fall grain in Moapa Valley, Clark County; yellowish areas appearing in fields. (Yamashita). CALIFORNIA - Damaging sorghum plantings in field test station at Holtville, Imperial County. (Cal. Coop. Rpt.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - OKLAHOMA - Counts per 10 sweeps in alfalfa ranged 150-200 in Tillman County and averaged 60 in Payne County. (Okla. Coop. Sur.). KANSAS - Ranged 2-12 per 10 sweeps in most alfalfa checked in Douglas, Johnson, Leavenworth, Jefferson, and Jackson Counties. (Simpson). OREGON - Extremely rare in alfalfa near Adrian, Malheur County. (Goeden).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - DELAWARE - Larvae averaged 444 per 100 plants during fall abundance survey in field corn in State; represents 2-fold increase over 1967. Plant infestations averaged 90 percent for State. Population highest ever recorded since fall abundance survey begun in State in 1936. (Burbutis). PENNSYLVANIA - Averaged 98 per 100 cornstalks in Centre County, about average for past few years. (Gesell). IOWA - Fall survey of corn completed October 5. Higher than in 1967 in all 12 districts of State. State average showed 72 percent of plants infested and 171 larvae per 100 plants. (Iowa Ins. Sur.). ALABAMA - Larvae light in most corn surveyed in Elmore and Coosa Counties. No larvae in 6 counties southward to Mobile and Baldwin Counties. (Estes et al.).

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - ALABAMA - No larvae found in 80 cornfields during annual survey in Mobile, Baldwin, Monroe, Butler, Crenshaw, Montgomery, Elmore, and Coosa Counties. (Estes et al.). MISSOURI - Average percent girdled cornstalks 22.54 for all counties surveyed in southeast area. Percent girdled stalks by county: Pemiscot 30.4; Scott 29.4; Butler 23.8; Cape Girardeau 8.0; Dunklin 23.5; Mississippi 23.8; New Madrid 17.2; Stoddard 24.4.

(Hanning et al.). KANSAS - Infestations ranged 10-30 percent in corn checked in McPherson and Sumner Counties. Larvae averaged one per infested stalk. (Redding). OKLAHOMA - Damaged 40 percent of cornstalks checked in Wagoner County and 50 percent of sweet corn ears in Johnston County. (Okla. Coop. Sur.).

FALL ARMYWORM (*Spodoptera frugiperda*) - OKLAHOMA - Averaged 4 per sorghum stalk in Wagoner County. (Okla. Coop. Sur.). ALABAMA - Light in few extremely late corn "patch" plantings in Mobile and Baldwin Counties. (Estes et al.).

CORN ROOTWORMS (*Diabrotica* spp.) - IOWA - State average showed 6.2 percent of corn plants lodged. (Gunderson). MICHIGAN - *D. longicornis* adults in larval infested ears in much field corn in State. (Janes, Oct. 15).

SMALL GRAINS

WHEAT STEM SAWFLY (*Cephus cinctus*) - NORTH DAKOTA - Hard Red Spring wheat stubble survey completed in 19 western counties. Percent cut stems ranged 0-19.8 (average 1.3) in all counties surveyed. Percent fields with cut stems ranged from 0 in Slope County to 100 in McHenry and Billings Counties. Cut stems in 70 percent of all fields surveyed. Percent cut stems heaviest (average 4.6) in McHenry County, averaged 3.7 in McLean and Divide Counties. (Brandvik, Kaatz).

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - ALABAMA - Severe damage reported on rye following peanuts in State. Light to heavy in all early planted rye in Houston County; some fields completely destroyed. Damaged small grain in Pike County. (Roney et al.).

FALSE CHINCH BUG (*Nysius ericae*) - WASHINGTON - Clustered on base of wheat plants October 10 in one-acre area and spreading in field near Centerville, Klickitat County. (Willson, Retan).

WHEAT CURL MITE (*Aceria tulipae*) - NEBRASKA - Heavy in volunteer wheatfield in Adams County. (Andersen).

TURF, PASTURES, RANGELAND

WHITE GRUBS - SOUTH CAROLINA - Infested many lawns and pastures in Piedmont area last few weeks. *Cotinis nitida* larvae infested 80 acres of newly seeded pasture in Spartanburg County October 11. Reports numerous from ornamental areas October 7-10; heavy larval populations followed cool, light rain after long, dry period at Clemson. (Nettles et al.).

NORTHERN MASKED CHAFER (*Cyclocephala borealis*) - MARYLAND - Larvae heavy in lawns near Hampstead, Carroll County. (U. Md., Ent. Dept.).

A WHITEFLY (*Aleurocybotus occiduus*) - ARIZONA - Controls in progress in Bermuda grass seed fields at Yuma, Yuma County. (Ariz. Coop. Sur.).

HAIRY CHINCH BUG (*Blissus hirtus*) - PENNSYLVANIA - Some damage to Greene County lawns; adults averaged about 2 per square foot. (Mallis, Oct. 10).

VAGABOND CRAMBUS (*Crambus vulvivagellus*) - TENNESSEE - Moths first collected in light traps September 19 in Knox County; very common around lights. (Heinrichs).

FORAGE LEGUMES

PEA APHID (*Acyrtosiphon pisum*) - MARYLAND - Averaged 10-25 per sweep in 60 acres of alfalfa in Dorchester County. (U. Md., Ent. Dept.). MISSISSIPPI - Increasing on alfalfa in northeast area; adults and nymphs averaged 40 per 100 sweeps in Lee and Lowndes Counties. (Dinkins). KANSAS - Ranged 10-25 per 10 sweeps in alfalfa examined in Douglas, Johnson, Leavenworth, Jefferson, and Jackson Counties. (Simpson).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Counts per 100 sweeps in alfalfa averaged 200 at Casa Grande, Pinal County, and in Salt River Valley, Maricopa County, and 290 in Yuma Valley, Yuma County. (Ariz. Coop. Sur.). MISSISSIPPI - Adults 15 per 100 sweeps in alfalfa in Lee County. (Dinkins).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Counts per 100 sweeps in alfalfa averaged 45 in Stewart District, Cochise County, 200 at Casa Grande, Pinal County, and 300 in Yuma Valley, Yuma County. (Ariz. Coop. Sur.). NEW MEXICO - Averaged 3-8 per 25 sweeps in alfalfa near Albuquerque, Bernalillo County. (Heninger). KANSAS - Ranged 15-50 per 10 sweeps in alfalfa in Douglas, Johnson, Leavenworth, Jefferson, and Jackson Counties. (Simpson).

BEEET ARMYWORM (*Spodoptera exigua*) - ARIZONA - Controls required on young alfalfa stands at Safford, Graham County. Counts per 100 sweeps in alfalfa averaged 100 in Pinal County and 200 in Yuma County. (Ariz. Coop. Sur.).

GREEN CLOVERWORM (*Plathypena scabra*) - MICHIGAN - Adult counts from Newaygo and Lenawee County blacklight stations indicate emergence still continuing; ranged 11-22 October 1-7. (Jones).

ZEBRA CATERPILLAR (*Ceramica picta*) - NEVADA - Heavy larval migrations rapidly decreasing in Smith and Mason Valleys, Lyon County; large numbers pupating. (Adams, Batchelder). Heaviest general infestation, especially on alfalfa, in Lyon County in over 14 years. (Batchelder).

A WALSHIID MOTH (*Walshia misecolorella*) - NEBRASKA - Infested several roots in second-year sweetclover planting in Dixon County; 3 larvae taken from roots of roadside sweetclover in Thurston County; 5 larvae taken from roots of roadside sweetclover in Cuming County. All are new county records. (Manglitz et al., Oct. 11).

ALFALFA WEEVIL (*Hypera postica*) - WISCONSIN - Adult on alfalfa at Jackson, Washington County. Collected by M.S. Conrad September 11. Determined by R.E. Warner. This is a new county record. (PPC). NEW MEXICO - Larvae averaged 0-5 per 25 sweeps in alfalfa near Albuquerque, Bernalillo County. (Heninger).

WESTERN FLOWER THRIPS (*Frankliniella occidentalis*) - ARIZONA - Averaged 1,000 per 100 sweeps in alfalfa in Stewart District, Cochise County. (Ariz. Coop. Sur.).

SOYBEANS

A CERAMBYCID BEETLE (*Dectes spinosus*) - MISSOURI - Larval damage severe due to boring of stems and girdling of plants in small area of Pemiscot and New Madrid Counties. Infested 90 percent of plants (60 percent girdled) in New Madrid County field. Determined by W.R. Enns. (Jones).

COTTON

BOLL WEEVIL (Anthonomus grandis) - ALABAMA - Numerous in late developing squares in 8 central and southwestern counties: stalks destroyed in many fields to prevent further buildup. (McQueen). For Boll Weevil in Texas see page 1007.

COTTON LEAFWORM (Alabama argillacea) - ALABAMA - No larvae in fields examined in 8 central and southwestern counties. (Estes et al.).

SUGARBEETS

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - New hatch of larvae begun in few fields in Chandler area, Maricopa County; some young center tips eaten out. Light in Pinal County; mostly feeding on outer leaves. (Ariz. Coop. Sur.).

POTATOES, TOMATOES, PEPPERS

EUROPEAN CORN BORER (Ostrinia nubilalis) - DELAWARE - High larval numbers indicated by fall abundance survey on corn reflected in very high infestations in potatoes and sweet peppers in State. (Burbutis).

BEANS AND PEAS

EUROPEAN CORN BORER (Ostrinia nubilalis) - ALABAMA - Last generation of earlier infestation noted in stems of 10 to 15-acre pea planting on prison farm in Elmore County. Larvae infested about 10-15 percent of plants in another pea planting. (McQueen).

COLE CROPS

IMPORTED CABBAGEWORM (Pieris rapae) - ALABAMA - Larvae extremely heavy and "ragging" collard foliage in Mobile, Baldwin, Monroe, Butler, Crenshaw, Montgomery, Elmore, and Coosa Counties; controls in progress. Larvae lighter in young turnip gardens. Adults in flight during day; egg laying heavy. (Estes et al.). MISSISSIPPI - Egg counts high on cabbage and collard plants in Oktibbeha County; indicates heavy infestation possible next week. (Boling). MICHIGAN - Numerous adults of this species and Colias philodice (clouded sulphur) in flight in 6 counties October 9. (Janes).

CROSS-STRIPED CABBAGEWORM (Evergestis rimosalis) - SOUTH CAROLINA - More numerous on cabbage than usual in Charleston area although not normally a pest. Also more numerous in mountain areas. (Cuthbert, Nettles).

CABBAGE WEBWORM (Heliothis rogatalis) - SOUTH CAROLINA - Frequently numerous on cabbage in Charleston area; controls usually necessary. (Cuthbert).

YELLOW-MARGINED LEAF BEETLE (Microtheca ochroloma) - ALABAMA - Adults left aestivation and infested young garden turnips in southwest counties. Adults numerous and egg laying begun in one garden in northern Mobile County. (Estes et al.).

GENERAL VEGETABLES

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Eggs averaged 5 and first instars 3 per plant in few young lettuce fields in Picacho area, Pinal County. Controls continue throughout lettuce-growing areas of State. (Ariz. Coop. Sur.).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - CALIFORNIA - Medium in 70-acre asparagus planting at El Centro, Imperial County. (Cal. Coop. Rpt.).

DECIDUOUS FRUITS AND NUTS

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - INDIANA - Adult captures continue to decrease at Vincennes. Only 35 males taken October 8-14 in virgin female traps in one orchard compared with 187 previous week and 696 two weeks ago. (Dolphin).

A LYONETIID MOTH (Bucculatrix pomifoliella) - INDIANA - Foliar damage heavy in 4-acre orchard not sprayed for 5 years at Vincennes. (Dolphin, Oct. 14).

LESSER PEACH TREE BORER (Synanthedon pictipes) - INDIANA - Caught 12 males October 8-14 at Vincennes orchard experiment. (Dolphin).

CODLING MOTH (Carpocapsa pomonella) - INDIANA - No adults in light, bait, or virgin female traps at Vincennes. Warm temperatures still favor larval development in apple fruit. (Dolphin, Oct. 14).

HICKORY SHUCKWORM (Laspeyresia caryana) - ALABAMA - Larvae in all orchards and isolated pecan trees examined in southwest and central areas; larvae in shucks represent overwintering generation. (Estes et al.). OKLAHOMA - Infested 10 percent of pecans checked in Payne County. (Okla. Coop. Sur.).

SAN JOSE SCALE (Aspidiotus perniciosus) - NEW MEXICO - Heavy on apples at Espanola, Rio Arriba County. (Durkin).

APPLE MAGGOT (Rhagoletis pomonella) - INDIANA - Caught 34 adults October 8-14 (31 previous period) on stickyboards at Vincennes. (Dolphin).

A SCARAB (Pleocomma minor) - OREGON - Females crawling on ground in tree fruit orchards in Hood River area, Hood River County. Very few males taken in black-light traps so far in 1968. (Zwick).

CITRUS

ARMORED SCALES - FLORIDA - Unaspis citri and Pinnaspis aspidistrae light to heavy on all of 600 mixed citrus plants inspected at Mims, Brevard County. (Levan, Oct. 11).

ORNAMENTALS

AN ARMORED SCALE (Pseudaonidia clavigera) - FLORIDA - Problem on more than 100 camellias at Land O'Lakes, Pasco County, October 7 and at Brandon, Hillsborough County, October 11. (Barber, Simmons).

THREE-LINED POTATO BEETLE (Lema trilineata) - CALIFORNIA - Adults medium on trumpetvine in Sonoma County. More frequent in 1968 than in past several years. (Cal. Coop. Rpt.).

AN ERIOPHYID MITE (Eriophyes gardeniella) - FLORIDA - Collected on gardenia in nursery at Monticello, Jefferson County, October 3. (Dekle). This is a new Florida Department of Plant Industry county record. (Fla. Coop. Sur.).

FOREST AND SHADE TREES

SPRUCE BUDWORM (Choristoneura fumiferana) - MINNESOTA - Populations and defoliation increased past 2 years throughout most of mixed spruce and balsam fir stands in northern area. Aerial and ground surveys to determine problem areas began in August. (Minn. Ins. Rpt.).

JACK-PINE BUDWORM (Choristoneura pinus) - MINNESOTA - Defoliation moderate to heavy in 15-square-mile area of jack pine about 6 miles east of Eveleth during aerial survey in August; spotted, moderate to heavy damage in Moose Lake and Willow River area. Very little top-kill; no mortality expected and no controls planned. (Minn. Ins. Rpt.).

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - OREGON - Results of fall survey in Umatilla County as follows: Hermiston and vicinity - 2,315 trees inspected, 373 infested, 377 suspected; Umatilla - 239 trees inspected, 3 infested; McNary Dam - 130 infested. Infested mostly Scotch or mugho pines. (Oregon Dept. of For.). OHIO - Severe damage found on 8-foot red pines in Warren County October 4; infested 30-40 percent of terminals. (Mooter).

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - VIRGINIA - Damage noted in September about average this year; damaging 30 percent of 3-year-old planting in Accomack County and widespread and heavy in 1967 plantings in Brunswick County. Heavier than usual in loblolly pine plantations in Patrick and Henry Counties; severe in 25 acres of loblolly pine in Louisa County; heavy in eastern Lunenburg County. (For. Pest Sur. Rpt.). SOUTH CAROLINA - In pupal stage by October 15. Infestations spotty throughout Dillon County. Infestations ranged up to 100 percent, including 8-acre plot of pines up to 15 feet tall; all trees examined were infested. (Bauer).

DOUGLAS-FIR TUSSOCK MOTH (Hemerocampa pseudotsugata) - CALIFORNIA - Adults light in 800-acre white fir stand in Hat Creek area, Shasta County. (Cal. Coop. Rpt.).

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - VIRGINIA - First activity in 1968 during September in Gloucester County (2 trees in one spot) and Mathews County (10 trees in one spot). Single inactive infestation of 8 trees in Brunswick County. Active in much of Richmond district in spots too small for effective salvage. Infesting 1-6 Virginia and shortleaf pines on two locations in Louisa County. Two additional spot infestations noted in Appomattox County and one in Prince Edward County. (For. Pest Sur. Rpt.).

TURPENTINE BEETLES (*Dendroctonus* spp.) - VIRGINIA - Normal activity during September; occasional infestation reported in Accomack, Brunswick, Gloucester, Mathews, and Lancaster Counties. Active on 1-4 spots involving 1-10 trees each in Buckingham, Amelia, Nottoway, and Pittsylvania Counties. Infesting 30 percent of acre-plantation of shortleaf pine in Augusta County. (For. Pest Sur. Rpt.).

ENGRAVER BEETLES (*Ips* spp.) - VIRGINIA - Seasonally more evident during September; infestations in Gloucester (4 trees), Lancaster (2 locations, 24 trees), Brunswick (scattered spots, 1-50 trees), and Accomack (one location, 6 trees) Counties. Infested Virginia pine in Pittsylvania County (several locations, 3-4 trees each). Often associated with southern pine beetle. (For. Pest Sur. Rpt.).

A BARK BEETLE (*Phloeosinus cristatus*) - ARIZONA - Found very destructive to many Arizona cypress trees at Tucson, Pima County, September 20. Determined by F.G. Werner. (Ariz. Coop. Sur.).

RED-HEADED PINE SAWFLY (*Neodiprion lecontei*) - VIRGINIA - Larvae occasionally on loblolly pine in Sussex and Greensville Counties and on seedlings in Mecklenburg and Stafford Counties during September. Defoliating few Virginia pines in one location of Roanoke County, and on loblolly and shortleaf pines in few scattered locations of Wise, Lee, and Washington Counties. (For. Pest Sur. Rpt.).

MARYLAND - Defoliated several young loblolly pines near Delmar, Wicomico County. (U. Md., Ent. Dept.).

PINE BARK APHID (*Pineus strobi*) - MINNESOTA - Moderate to heavy on white, red, and jack pine throughout State; controls required in some small locations. (Minn. Ins. Rpt.).

VIRGINIA - Active on 4 locations in Pulaski County in September. (For. Pest Sur. Rpt.).

MIMOSA WEBWORM (*Homadaula anisocentra*) - CALIFORNIA - All stages heavy on mimosa trees at Nord, Butte County. Larvae medium on mimosa foliage at a residence 4 miles southeast of Red Bluff, Tehama County, for a new county record. Collected by G.A. Neilsen and R.P. Allen October 11. This represents first find in State outside Butte County and northwesterly spread of about 38 miles from original find at Chico. Also collected at and near Los Molinos, Tehama County, and at Durham, Butte County. (Cal. Coop. Rpt.).

FOREST TENT CATERPILLAR (*Malacosoma disstria*) - MINNESOTA - Heavy defoliation of aspen expected again in 1969 in area surrounding International Falls. (Minn. Ins. Rpt.).

ELM LEAF BEETLE (*Pyrrhalta luteola*) - NEW MEXICO - No increase noted in 1968 at Tularosa, Otero County. (Elson). Negative in survey of southern Dona Ana County. (Campbell, Elson).

A PSYLLID (*Trioza alacris*) - CALIFORNIA - Medium on bay trees at Sacramento, Sacramento County. Very damaging to bay trees in 1968. (Cal. Coop. Rpt.).

BEAN THRIPS (*Caliothrips fasciatus*) - CALIFORNIA - Nymphs heavy on magnolia nursery stock at Sacramento, Sacramento County. (Cal. Coop. Rpt.).

MAN AND ANIMALS

MOSQUITOES - OKLAHOMA - Larvae collected per dip in Payne County: 1-2 *Anopheles punctipennis* and *A. maculipennis*, 50 *Culex pipiens* complex, up to 100 *Aedes* spp.; *Culiseta inornata* common and *Anopheles barberi* present in tree holes. (Okla. Coop. Sur.).

SCREW-WORM (*Cochliomyia hominivorax*) - Total of 1,019 cases reported in U.S. October 13-19 as follows: TEXAS - Atascosa 14, Austin 1, Bandera 13, Bee 4, Bexar 12, Blanco 3, Borden 1, Brewster 10, Brooks 12, Brown 2, Caldwell 1, Callahan 4, Cameron 1, Coke 4, Coleman 3, Comal 4, Concho 8, Crockett 15,

De Witt 11, Dimmit 24, Duval 15, Edwards 33, Frio 32, Gaines 1, Gillespie 9, Glasscock 2, Goliad 4, Gonzales 4, Guadalupe 3, Hays 2, Hidalgo 34, Irion 11, Jeff Davis 12, Jim Hogg 8, Jim Wells 12, Jones 1, Karnes 14, Kendall 8, Kenedy 16, Kerr 3, Kimble 6, Kinney 54, Kleberg 1, Lampasas 7, La Salle 14, Lavaca 1, Lee 1, Live Oak 9, Llano 8, Maverick 18, McCulloch 7, Martin 2, Mason 16, Medina 45, Menard 11, Midland 1, McMullen 10, Mills 2, Mitchell 2, Nolan 1, Nueces 3, Pecos 13, Presidio 12, Reagan 2, Real 5, Reeves 4, Refugio 1, San Patricio 4, San Saba 1, Schleicher 24, Shackelford 1, Starr 14, Stephens 1, Sterling 2, Stonewall 1, Sutton 10, Taylor 1, Terrell 30, Throckmorton 1, Tom Green 6, Travis 1, Uvalde 63, Val Verde 113, Ward 1, Webb 26, Willacy 4, Williamson 3, Wilson 19, Winkler 1, Young 1, Zapata 11, Zavala 26; ARIZONA - Gila 2, Graham 4, Greenlee 1, Maricopa 1, Mohave 1, Pinal 8, Yuma 2; CALIFORNIA - Imperial 2, Riverside 1, San Diego 2, San Luis Obispo 1; NEW MEXICO - Eddy 1, Lea 1. Total of 823 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Territorio sur de Baja California 172, Sonora 156, Chihuahua 174, Coahuila 193, Nuevo Leon 74, Tamaulipas 54. Total of 38 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 94,852,000; New Mexico 1,880,000; Arizona 10,590,000; California 1,900,000; Mexico 80,746,000. (Anim. Health Div.).

HORN FLY (*Haematobia irritans*) - OKLAHOMA - Averaged 350 per head on cattle in Payne and Noble Counties. Heavy in Johnston and Cotton Counties; moderate in Cleveland County. (Okla. Coop. Sur.). MISSISSIPPI - Averaged 60-100 per head on 20 Oktibbeha County cattle. (Dinkins).

STABLE FLY (*Stomoxys calcitrans*) - OKLAHOMA - Averaged 6 per head on cattle checked in Payne and Noble Counties. (Okla. Coop. Sur.).

HOUSE FLY (*Musca domestica*) - OKLAHOMA - Averaged 15 per scudder grid in untreated barns in Payne County. (Okla. Coop. Sur.).

HORSE BOTS (*Gasterophilus* spp.) - OKLAHOMA - *G. intestinalis* averaged 8 per head on horses in Payne County; egg laying heavy. *G. nasalis* and *G. haemorrhoidalis* lighter in some areas. (Okla. Coop. Sur.).

A BITING MIDGE (*Culicoides variipennis*) - OKLAHOMA - Larvae numerous in overflow areas around water troughs in Stillwater area, Payne County. (Okla. Coop. Sur.).

BROWN RECLUSE SPIDER (*Loxosceles reclusa*) - ALABAMA - Specimen collected from home in Blount County. (Conway).

HOUSEHOLDS AND STRUCTURES

MILLIPEDS - PENNSYLVANIA - General nuisance, moderate numbers around many homes statewide. (Gesell). IOWA - Moving into homes in Clarke, Fayette, and Jackson Counties from adjacent pastures and diverted areas. (Gunderson).

MISCELLANEOUS WILD PLANTS

A JAPANESE WEEVIL (*Calomycterus setarius*) - NEBRASKA - Adult collected on bindweed at Lincoln, Lancaster County. June 22 by A. Penner. Determined by R.E. Warner. This is a new State record. (Keith).

STORED PRODUCTS

DARKLING BEETLES (*Tribolium* spp.) - CALIFORNIA - *T. castaneum* and *T. confusum* medium in grain sorghum in feedlot storage facility at Brawley, Imperial County. (Cal. Coop. Rpt.).

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) - UTAH - Infesting stored grain at Manti, Sanpete County. (Knowlton, Herring, Oct. 15).

BENEFICIAL INSECTS

CONVERGENT LADY BEETLE (Hippodamia convergens) - ARIZONA - Averaged 50 per 100 sweeps on Cochise County alfalfa. (Ariz. Coop. Sur.).

HEMIPTEROUS PREDATORS - ARIZONA - Average per 100 sweeps in alfalfa: Nabis spp. 60 in Yuma County and 15 in Cochise County; Orius spp. 20 in Cochise County. Orius spp. buildup heavy in Yuma County. (Ariz. Coop. Sur.).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - No additional finds in traps in El Paso area, El Paso County. In High Plains area, high numbers appeared due mainly to lag in control and to heavy emergence in last week of September. New finds scattered throughout control zone. New infestations totaling about 75,000 acres detected along Caprock south of Post and extending to Ackerly in Dawson County. Light or absent in area at Turkey, Hall County, and Quitaque, Briscoe County, and adjacent eastern High Plains. Treated aggregate of 274,796 acres (3 applications) during September; fourth application begun September 30. (PPC South. Reg.).

BOLL WEEVIL COMPLEX (Anthonomus grandis complex) - ARIZONA - One weevil found in cotton field in southern Pinal County; 3 weevils from 25 live bait traps in cultivated cotton in Avra Valley and 34 from 5 traps in wild cotton at Molino Basin, Pima County. (Ariz. Coop. Sur.).

CARIBBEAN FRUIT FLY (Anastrepha suspensa) - FLORIDA - Heavy in trap collections in Sebring area, Highlands County, and in southern part of State. (PPC South. Reg., Sept. Rpt.).

GOLDEN NEMATODE (Heterodera rostochiensis) - Approximately 2,000 soil samples collected representing 15,000 to 20,000 acres of potato land in MAINE. Soil sampling temporarily suspended in central NEW JERSEY during early September because potatoes not being dug as rapidly as expected. During remainder of month limited sampling conducted on farms known to have received seed from Steuben County, New York. Total of 1,033 samples collected from 2,837 acres in New Jersey during month. Survey of tablestock potato fields in Upstate NEW YORK continued during September. Total of 17,978 samples collected from 12,494 acres, including Elba muck area. All samples processed to date from these lands negative. Post-treatment survey completed on 6 of 8 fields fumigated in Steuben County. Survey continued on Long Island. To date, 5,954 samples collected from 2,776 acres; figures include post-treatment survey. Processing of these samples began September 30. Collection of samples continued in Accomack and Northampton Counties, VIRGINIA, during September. Of samples collected, about 800 processed; results negative for H. rostochiensis. (PPC East. Reg.).

GRASSHOPPERS - NEW MEXICO - Counts of 8 or more per square yard on about 1,445,400 acres in survey of rangeland in 16 counties. (N.M. Coop. Rpt.). Heavy, damaged pepper foliage near Albuquerque, Bernalillo County. (Heninger).

GYPSY MOTH (Porthetria dispar) - PENNSYLVANIA - Moths trapped at 648 sites in 17 counties during 1968. Released 1,940,000 Ooencyrtus kuwanai (an encyrtid wasp) in infested eastern counties during September; released 2,298,000 during season in State. NEW JERSEY - Moths recovered in all counties trapped. Seasonal totals to date are 153 positive trap sites in 55 towns. Infestations extensive north of Hopewell, Hunterdon County, and near Indian Mills, Burlington County. Centralized trap recoveries made near Cape May Court House, Cape May County, in Weekstown area, Atlantic County, and in Glassboro and Clayton area, Gloucester County; egg masses scattered and light. Egg masses found at 27 positive trap

sites and near 4 negative trap sites. Released about 47,000 parasites during September. NEW YORK - Caught 50 moths in 48 traps in State as of September 30; 21 catches in nonregulated area and remainder in suppressive area. Released 1,226,052 *O. kuwanai* as of September 30 in State. VERMONT - Collected 12 moths at 8 trap sites in nonregulated area in Berkshire (2) and Enosburg (2) Townships, Franklin County, and in Waterville (1) and Stowe (7) Townships, Lamoille County. (PPC East. Reg.).

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - FLORIDA - Extensive spread on northern side of Tampa eradication area. GEORGIA - Treated about 722,680 acres at Savannah, Chatham County, and 116,468 acres at Waycross, Ware County, during September. (PPC South. Reg.).

PINK BOLLWORM (*Pectinophora gossypiella*) - CALIFORNIA - Negative in 300,000 green bolls in Kern County. Sterile releases totaled 628,416; no moth recovery in hexalure traps. Detection results negative for wild specimens. "Hexalure" in all traps in Central Valley; gin trash survey begun in same area as cotton matured. Final release of scheduled 6,000 sterile moths at Borrego, San Diego County. Collected 708 wild and 38 sterile moths. Boll infestation increased from 13 to 86 percent during 6-week check period. Only 5 acres of cotton in county. (Cal. Coop. Rpt.). NEVADA - Collected 13 males in sex lure traps in Moapa Valley, Clark County, October 14. (Munson, Yamashita). Trapping discontinued in Pahrump Valley, Nye County; gin trash inspections to begin. (Yamashita). ARIZONA - Infested 26 percent of bolls in field of long staple cotton at Yuma, Yuma County; infestations begun in other green fields where controls discontinued. (Ariz. Coop. Sur.). NEW MEXICO - Counts for 3 nights in 5 sex lure traps in Dona Ana and Otero Counties: Radium Springs - 40 moths, southeast of Hatch - 2, south of Rincon - 1, Rincon and northeast of Hatch - no moths; for one night, Tularosa - 1, south of Tularosa - no moths. Larval infestation 0-4 percent in green boll survey in Columbus, Lewis Flat, and Deming area of Luna County. (Elson, Campbell). OKLAHOMA - Collected 4 larvae from 5 cotton bales ginned in Marshall County and 2 larvae from 2 bales ginned in Love County. (Okla. Coop. Sur.).

SOYBEAN CYST NEMATODE (*Heterodera glycines*) - OKLAHOMA - Survey negative on 10,190 acres in 17 counties. NORTH CAROLINA - Infested several new properties in Wilmington district. Additional damage to soybeans noted in Elizabeth City and Pender County areas and on Knotts Island, Currituck County. (PPC South. Reg., Sept. Rpt.).

WHITE-FRINGED BEETLES (*Graphognathus* spp.) - SOUTH CAROLINA - First collections in 5 years in area of original infestation at Sumter. GEORGIA - Extensions in Dodge, Early, Seminole, Stewart, and Wilcox Counties. ALABAMA - Infested additional 13,540 acres in northern area. MISSISSIPPI - New infestations found in Alcorn, Benton, Chickasaw, and Madison Counties during survey of 22 counties in September. (PPC South. Reg.).

HAWAII INSECT REPORT

Turf, Pasture - Larval damage of a GRASS WEBWORM (Herpetogramma licarsisalis) light to moderate in North Kona (Huehue Ranch), Hawaii Island, at 25-3,500 feet elevation. Larvae ranged 12-15 per square foot. Most eggs parasitized by Trichogramma semifumatum (a minute egg parasite). (Yoshioka).

Vegetables - GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) troublesome on egg-plants, cucumbers, and snap beans in lowland farming districts of Waianae, Waimanalo, and Pupukeya of Oahu and on tomato at lower Kula, Maui, at 1,700-2,500 feet elevation. Controls hampered by rains. (Miyahira). LEAF MINER FLIES (Liriomyza spp.) and CARMINE SPIDER MITE (Tetranychus cinnabarinus) generally light on snap beans, yard-long beans, and cucumbers at Waianae and Waimanalo, Oahu. (Funasaki).

Fruits - FRUIT FLIES - On Hawaii Island from June to August 1968, samplings of wild momordica (4,627 fruits) from Honomaliho produced 329 melon fly (Dacus cucurbitae) larvae per kilogram of fruit, papaya (307 fruits) from Kapoho yielded 115 oriental fruit fly (D. dorsalis) larvae per kilogram of fruit, and peach (24 fruits) from Kona gave 313 Mediterranean fruit fly (Ceratitidis capitata) and D. dorsalis larvae per kilogram of fruit. Other samplings of mango and acerola from Kona yielded fewer C. capitata and D. dorsalis larvae. No larvae in Jerusalem-cherry samplings (2,130 fruits) from Waikii. Percent parasitism was 5.2 in papaya, 51.3 in peach, 51.6 in mango, 21.4 in acerola, and 6.3 in wild momordica. (Hawaii Fruit Fly Investigations, USDA). CLOUDY-WINGED WHITEFLY (Dialeurodes citrifolii) heavy on orange and lime tree foliage at Hilo, Hawaii Island. (Yoshioka).

Forest and Shade Trees - A CONIFER APHID (Cinara carolina) moderate to heavy on loblolly pine at Waimea, Hawaii Island. Terminal dieback and yellowing of needles noted. (Yoshioka). Adults of a PLATASPID BUG (Coptosoma xanthogramma) light, nymphs negligible, on Sesbania sp. at Poipu, Kauai. Of 177 eggs collected in 5 minutes, 158 (89.2 percent) parasitized by Trissolcus sp. (a scelionid wasp). (Sugawa).

Man and Animals - MOSQUITOES - Collected 272 Aedes vexans nocturnus and 9,103 Culex pipiens quinquefasciatus in 48 light traps on Oahu during September. A. vexans nocturnus remained light in all areas; C. pipiens quinquefasciatus heaviest at Waialua (2,396) and Kawaihoa (2,105). (Mosq. Cont. Br., Dept. of Health).

Miscellaneous Insects - Hundreds of SWEETPOTATO HORNWORM (Agrius cingulatus) larvae noted on roads and crawling on buildings at Hickam Air Force Base, Honolulu, Oahu. Larvae also numerous on nearby weeds. Migration apparently caused by lack of food (wild morning-glory). Migrations reported in February 1968 at Makapuu, Oahu, and near airport on Molokai. (Takabayashi).

INSECT DETECTION

New State Records

A JAPANESE WEEVIL (Calomycterus setarius) - NEBRASKA - Adult on bindweed at Lincoln, Lancaster County. Collected by A. Penner June 22, 1968. Determined by R.E. Warner. (p. 1006).

New County Records

A WALSHIID MOTH (Walshia miscecolorella) - NEBRASKA - Cuming, Dixon, and Thurston Counties. (p. 1001).

ALFALFA WEEVIL (Hypera postica) - WISCONSIN - Washington County. (p. 1001).

AN ERIOPHYID MITE (Eriophyes gardeniella) - FLORIDA - Jefferson County. (p. 1004).

MIMOSA WEBWORM (Homadaula anisocentra) - CALIFORNIA - Tehama County. (p. 1005).

CORRECTIONS

CEIR 18(39):919 and 18(41):955, 959 - WESTERN YELLOW-STRIPED ARMYWORM (Prodenia praefica) for Nevada should read ZEBRA CATERPILLAR (Ceramica picta). (Nev. Coop. Rpt.).

CEIR 18(42):986 - FIELD CRICKETS (Gryllus spp.) - TEXAS - Delete "Heavy on cattle near Brackettville, Kinney area, ..." Should read: Very heavy populations causing nuisance in central and southern areas. Very heavy in Temple area of Bell County and in Caldwell, Guadalupe, Lavaca, Gonzales, Karnes, and Wilson Counties. (McMenemy, Massey).

Weather of the Week continued from page 998.

TEMPERATURE: Cold air spilled into the West. Scattered western localities registered freezing temperatures on Monday morning and by Thursday morning a hard freeze had occurred over most of the Great Basin and the Rocky Mountains. Alpine, Texas, registered 32° Friday morning. The cold air spread eastward. Grand Island, Nebraska, registered 86° Tuesday afternoon but only 61° on Wednesday. While the Canadian blast held afternoon temperatures in Montana and Wyoming in the 40's early in the week, southerly winds continued to pump summer heat northward over the central and eastern parts of the Nation. Maximums reached 80° at many localities from Lower Michigan to northern Maine. Houlton, Maine, registered 80° on Wednesday. A cold front moving southeastward in the latter part of the week interrupted the Indian Summer. On Friday afternoon temperatures remained in the 60's as far south as Huntsville, Alabama. Temperatures averaged below normal over most of the West and above normal over the East. Much of the Great Basin and the western slope of the Rockies averaged 4° to 7° below normal while most of the northeast quarter of the Nation averaged 6° to 16° warmer than normal. (Summary supplied by Environmental Data Service, ESSA.)

COOPERATIVE ECONOMIC INSECT REPORT

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS - 1967

Introduction

Prior to 1966 insect loss estimates were published in the Cooperative Economic Insect Report as individual reports. An attempt has been made for the third year to condense loss estimates from the various States into a single report. This gives a more meaningful and better overall picture of the crop losses. The data has been compiled from the crop loss estimates submitted from 19 States. The entomologists responsible for the 1967 estimates and their respective States are listed below.

J.E. May	Arizona
W.P. Boyer	Arkansas
G.Y. Funasaki	Hawaii
C.E. White	Illinois
J.H. Simpson	Kansas
J.L. Hellman	Maryland
R.G. Flaskerd	Minnesota
R.L. Dinkins	Mississippi
D.L. Keith	Nebraska
R.C. Bechtel	Nevada
S.R. Race	New Jersey
G.L. Nielsen	New Mexico
W.J. Brandvik	North Dakota
J.M. Lamdin	Oklahoma
P.A. Jones	South Dakota
S.E. Bennett	Tennessee
L.R. Green	Texas
W.A. Allen	Virginia
M.S. Conrad	Wisconsin

Copies of the report were sent to the States involved for review prior to publication. Some suggestions for improvement were made.

Separates of this report are available from Survey and Detection Operations.

U.S. Dept. Agr.
Coop. Econ. Ins. Rpt.
18(43):1012-1028, 1968

Crop	State	Pest Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Loss (\$1000)	
				Loss Per Acre (Units)	Loss Per Acre (dollars)	Non-treated Acres (1000)	Sub-total (\$1000)	Cost Per Acre (dollars)	Treated Acres (1000)		Sub-total (\$1000)
CORN (Grain)											
Arizona	CR, A, ICB, Cws, FB, CE, Aws, SCM, SwCB		21.00	Bu.	8.79	7.00	61.53	9.25	14.00	129.50	191.03
Illinois	SI		10,915.00	7.00	7.50	4,710.71	35,330.32	3.25	6,204.29	20,163.94	55,494.26
	ECB		"	6.00	6.00	35.00	210.00	3.50	63.37	196.11	406.11
	Gh, Aw, CFB		"	-	-	-	-	2.50	81.77	204.32	204.32
	CLA		"	-	-	-	-	2.50	38.77	96.93	96.93
	CR		"	-	-	-	-	3.00	47.12	141.35	141.35
Kansas	Cws		"	-	-	-	-	2.50	97.69	244.23	244.23
	ECB		1,060.00	1.50	1.64	414.58	679.91	2.50	11.15	27.88	707.79
CR		"	"	10.20	11.12	20.00	222.40	2.50	700.00	1,750.00	1,972.40
Maryland	Aw, A, Cws, SW, ECB, FA, CE		526.00	8.20	8.94	115.00	1,028.10	5.00	10.00	50.00	1,078.10
Minnesota	CR, Ww, WG, Cws, Gh		4,943.00	5.76	5.82	650.00	3,783.00	2.75	1,600.00	4,400.00	8,183.00
Nebraska	CR, ECB, CE, SCB, Cws, Gh, Ww, M, CLA, SCM, SB, Aw, FA, WBC, G		4,510.00	7.30	7.88	333.36	2,626.90	2.60	2,164.80	5,628.48	8,255.38
South Dakota	Ww, Gh, ECB, CR		3,599.00	4.60	4.97	674.81	3,353.82	5.00	2,024.44	10,122.19	13,476.01
	Aw, Cws, SW, S		484.00	3.65	4.38	77.00	337.26	2.50	38.00	95.00	432.26
Wisconsin	CR, ECB, SI, CLA		1,703.00	-	-	-	-	2.00	824.79	1,649.58	1,649.58
See Legend I				Subtotal			47,633.24	44,899.61			92,532.85
CORN (Silage)											
Nevada	SPM		6.00	-	-	-	-	6.48	2.20	14.25	14.25
See Legend I				Subtotal			-	14.25			14.25
SWEET CORN											
Hawaii	CE, SpM, CLA, CRB, BA, Cp		0.31	-	-	-	-	65.00	0.31	20.15	20.15

Crop	State	Irrig. Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Loss (\$1000)	
				Loss Per Acre (Units)	Loss Per Acre (dollars)	Non- treated Acres (1000)	Sub- total (\$1000)	Cost Per Acre (dollars)	Treated Acres (1000)		Sub- total (\$1000)
SWEET CORN											
(cont.)											
Minnesota	ECB, CE, CR		121.40	-	-	-	-	3.50	90.91	318.17	318.17
				Crates							
New Jersey	CFB, CE, ECB, FA, CLA		11.40	22.50	*78.75	1.10	*110.25	50.00	10.00	300.00	616.25
Wisconsin	ECB, CR, CE		114.00	-	-	-	-	5.00	54.85	274.25	274.25
See Legend I				Subtotal			110.25	1,112.57			1,222.82
POPCORN											
Nebraska	CR, ECB, CE, SCB, Cws, M, Gh, Ww, CLA, SCM, SB, Aws, FA, WBC, G		15.00	Lbs.							
				405.00	12.56	2.30	28.89	2.65	10.20	27.03	55.92
See Legend I				Subtotal			28.89	27.03			55.92
SORGHUM											
(Grain)											
Arizona	LB, Aws, CE, FB, SM, Cws, LCB, SwCB		246.00	Bu. 6.48	7.58	70.00	530.60	5.15	63.00	334.75	865.35
Nebraska	CLA, Cws, Gh, Ww, PB, RA, CB, SCM, SCB		2,298.00	2.28	2.05	205.00	420.25	2.50	170.00	425.00	845.25
Oklahoma	CE, SM, CLA		679.00	6.08	10.94	168.46	1,842.95	2.46	35.24	86.69	1,929.64
Texas	CE, ScBo, SM, Sww, CB, SwCB		6,735.00	12.75	13.01	1,800.00	23,418.00	2.00	1,200.00	2,400.00	25,818.00
See Legend I				Subtotal			26,211.80	3,246.44			29,458.24
SORGHUM											
(Forage)											
Oklahoma	CE, SM, CLA		317.00	Tons 0.30	5.34	78.65	419.98	2.46	16.45	40.47	460.45
See Legend I				Subtotal			419.98	40.47			460.45
				Total			74,404.16	49,340.37			123,744.53

*Figure includes quality loss.

Crop	State	Pest Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Losses (\$1000)	
				Loss Per Acre (Units)	Loss Per Acre (dollars)	Non-treated Acres (1000)	Sub-total (\$1000)	Cost Per Acre (dollars)	Treated Acres (1000)		Sub-total (\$1000)
WHEAT (cont.)											
Kansas		ACw, PMC BWM Gh HF	Bu.								
			11,081.00	2.50	3.35	382.61	1,281.74	2.00	44.45	88.90	1,370.64
			"	0.50	0.67	1,337.59	840.19	2.10	14.30	30.03	926.22
			"	0.75	1.00	644.00	644.00	2.00	25.00	50.00	694.00
Nebraska		BWM, WG, WSM, CWS, HF, GD, Gh, Ww, EGA, CB, WCM	"	0.26	0.35	3,500.00	1,225.00	-	-	-	1,225.00
			3,325.00	0.80	1.09	245.00	267.05	2.50	105.00	262.50	529.55
			"	0.44	0.70	2,000.00	1,400.00	-	-	-	1,400.00
			7,962.00	4.40	6.86	30.00	205.80	2.00	20.00	40.00	245.80
North Dakota		WSS Gh, Ww, WG	5,217.00	3.74	5.61	1,212.56	6,802.48	2.43	421.97	1,025.38	7,827.86
			2,639.00	0.28	0.40	4.00	1.60	2.50	5.00	12.50	14.10
			3,326.00	2.40	3.60	175.00	630.00	2.00	200.00	400.00	1,030.00
			See Legend II						Subtotal	13,460.46	2,230.93
WHEAT, OATS, BARLEY											
Minnesota		A, Gh, Aw	4,690.00	-	-	-	-	2.00	2.00	4.00	4.00
			See Legend II						Subtotal	-	-
SMALL GRAINS											
Nevada		A	38.00	-	-	-	-	3.02	7.13	21.50	21.50
			See Legend II						Subtotal	-	-
RICE											
Arkansas		RWW, GC RSP, Gh, FA	477.00	-	-	-	-	0.75	367.67	275.75	275.75
			"	-	-	-	-	2.00	37.92	75.84	75.84
See Legend II						Subtotal	-	-	351.59	351.59	

Crop	State	Pest Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Loss (\$1000)
				Loss Per Acre (Units)	Loss Per Acre (dollars)	Non-treated Acres (1000)	Cost Per Acre (dollars)	Treated Acres (1000)	Sub-total (\$1000)	
RANGE GRASS										
South Dakota	Gh		26,000.00	Tons 0.07	1.25	54.00	67.50	-	-	67.50
See Legend II										
Subtotal 67.50										
Total 13,887.71										
3,144.12 17,031.83										
LEGEND II - SMALL GRAIN, RICE, AND RANGE GRASS PEST COMPLEX										
A Aphids										
ACw	Army Cutworm	EGA	English Grain Aphid	RWW	Rice Water Weevil					
AL	Aster Leafhopper	FA	Fall Armyworm	SMC	Salt-Marsh Caterpillar					
Aw	Armyworm	Gb	Greenbug	StB	Stink Bugs					
Aws	Armyworms	GC	Grape Colaspis	WCM	Wheat Curl Mite					
BWM	Brown Wheat Mite	Gh	Grasshoppers	WG	White Grubs					
CB	Chinch Bug	HF	Hessian Fly	WGM	Winter Grain Mite					
Cws	Cutworms	L	Leafhoppers	WSM	Wheat Stem Maggot					
DB	Darkling Beetles	M	Mites	WSS	Wheat Stem Sawfly					
		PWC	Pale Western Cutworm	Ww	Wireworms					
		RSB	Rice Stink Bug							
ALFALFA (Hay)										
Arizona	EAW, AC, A, M, Cws, TCAH, L	Tons 0.53	196.00	16.64	75.00	1,248.00	3.65	75.00	273.75	1,521.75
Illinois	Wbw, Gh, MS, PA, AIW	- 0.50	864.00	- 12.50	80.00	1,000.00	3.25 3.25	30.27 58.29	98.38 189.43	98.38 1,189.43
Maryland	AIW, PA, MS, PL	0.96	70.00	38.40	5.00	192.00	6.00	65.00	390.00	582.00
Nevada	AIW, WYA, PA, ACw, AC, T	-	154.00	-	-	-	3.27	63.85	208.64	208.64
New Mexico	CE, AC, PA, SAA, AIW, Gh	0.45	193.00	*14.10	20.00	*282.00	2.70	15.00	40.50	322.50
North Dakota	Gh, PA	0.06	1,380.00	1.08	120.00	129.60	2.10	30.00	63.00	192.60
Oklahoma	PA, SAA	0.62	559.00	13.33	162.24	2,162.71	3.99	91.26	364.14	2,526.85
South Dakota	Gh, AIW, FB, PA	0.42	2,196.00	9.66	973.00	9,399.18	2.50	125.00	312.50	9,711.68
Tennessee	AIW	0.25	75.00	*13.00	30.00	*390.00	9.00	45.00	405.00	795.00
Virginia	AIW, PA, MS, PL	1.10	82.00	*62.00	17.00	*1,054.00	6.60	48.00	316.80	1,370.80

*Figure includes quality loss.

Crop	State	Pest Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Loss (\$1000)	
				Loss Per Acres (Units)	Loss Per Acres (dollars)	Non- treated Acres (1000)	Sub- total (\$1000)	Cost Per Acres (dollars)	Treated Acres (1000)		Sub- total (\$1000)
ALFALFA (Hay) (Cont.)				Tons							
Wisconsin	MS, PB, PL, CLW		2,988.00	0.08	*3.02	1.34	*4.03	2.00	63.66	127.33	131.36
	See Legend III					Subtotal	15,861.52			2,789.47	18,650.99
ALFALFA (Seed)				Cwt.							
Arizona	Cws, L, TCAH, A, M, EAW, LB		16.00	0.35	15.23	3.00	45.69	9.25	13.00	120.25	165.94
Nebraska	W, Ww, BB, Wbw, C, PB, L, Gh, A, Cws		32.00	9.00	2.79	9.00	25.11	2.70	15.00	40.50	65.61
Nevada	PA, ASC, ACw, WYA		11.00	-	-	-	-	10.43	**31.15	324.96	324.96
	See Legend III					Subtotal	70.80			485.71	556.51
ALFALFA-GRASS (Hay)				Tons							
Minnesota	Gh, L, Cws, PA, PB		3,407.00	0.11	2.85	292.00	832.20	3.25	8.00	26.00	858.20
	See Legend III					Subtotal	832.20			26.00	858.20
CLOVER-TIMOTHY (Hay)				Tons							
Illinois	CLW		501.00	0.12	2.80	3.20	8.96	3.25	6.85	22.26	31.22
	See Legend III					Subtotal	8.96			22.26	31.22
TIMOTHY											
Nevada	BGM, GT	0.40		-	-	-	-	3.33	***0.60	2.00	2.00
	See Legend III					Subtotal	-			2.00	2.00

*Figure includes quality loss.

**Total acreage treated about 3 times.

***Total acreage treated 1.5 times.

Crop	State	Pest Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Loss (\$1000)	
				Loss Per Acre (Units)	Loss Per Acre (dollars)	Non-treated Acres (1000)	Sub-total (\$1000)	Cost Per Acre (dollars)	Treated Acres (1000)		Sub-total (\$1000)
HAY	Nebraska	Gh, GW, Cws, SAA, PB, PA, CoA, L, CW, ALW, AC, Wbw, AWS, CR, G	4,523.00	0.07	1.32	520.00	686.40	2.50	80.00	200.00	886.40
See Legend III						Subtotal	686.40			200.00	886.40
						Total	17,459.88			3,525.44	20,985.32
LEGEND III - FORAGE LEGUME AND GRASS HAY PEST COMPLEX											
		A Aphids	CR Corn Rootworms	M Mites							
		AC Alfalfa Caterpillar	CW Clover Weevils	MS Meadow Spittlebug							
		ACw Army Cutworm	Cws Cutworms	PA Pea Aphid							
		ALW Alfalfa Weevil	EAW Egyptian Alfalfa Weevil	PB Plant Bugs							
		ASC Alfalfa Seed Chalcid	FB Flea Beetles	PL Potato Leafhopper							
		Aws Armyworms	G Grubs	SAA Spotted Alfalfa Aphid							
		BB Blister Beetles	Gh Grasshoppers	T Trips							
		BGM Banks Grass Mite	GT Grass Thrips	TCAH Three-Cornered Alfalfa Hopper							
		C Chalcids	GW Garden Webworm	W Weevils							
		CE Corn Earworm	LB Lygus Bugs	Ww Wireworms							
		CLW Clover Leaf Weevil	L Leafhoppers	WYA Western Yellow-Striped Armyworm							
		CoA Clover Aphids									
SOYBEANS											
Arkansas		StB, TCAH, Ch, CE, FA, GCw	Bu. 0.69	1.71	63.21	108.09	2.00	831.58	1,663.15	1,771.24	
Maryland		SpM, CE, T, BLB, MBB, JB	2.00	4.90	45.00	220.50	3.00	5.00	15.00	235.50	
Minnesota		BLB, Cws, Gh, WG	0.98	2.45	4.00	9.80	2.50	1.00	2.50	12.30	
Nebraska		BLB, WG, MBB, Wbw, GCw, Gh, CR, Cws, Ww	0.45	1.10	60.00	66.00	3.00	10.00	30.00	96.00	
Virginia		MBB, StB, M, CE	2.15	*10.27	50.00	*513.50	3.00	150.00	450.00	963.50	
See Legend IV						Subtotal	917.89		2,160.65	3,078.54	

Crop	State	Post Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Loss (\$1000)
				Loss Per Acre (Units)	Loss Per Acre (\$dollars)	Non-treated Acres (1000)	Cost Per Acre (dollars)	Treated Acres (1000)	Sub-total (\$1000)	
PEANUTS				Lbs.						
Virginia		SCR, PL, T, M	102.00	626.25	*82.65	10.00	5.00	70.00	350.00	1,176.50
		See Legend IV				Subtotal			350.00	1,176.50
						Total			2,510.65	4,255.04

LEGEND IV - SOYBEAN AND PEANUT PEST COMPLEX

BLB	Bean Leaf Beetle	GCw	Green Cloverworm	Spm	Spider Mites
CE	Corn Earworm	Gh	Grasshoppers	StB	Stink Bugs
CI	Cabbage Looper	JB	Japanese Beetle	T	Thrips
CR	Corn Rootworms	M	Mites	TCAH	Three-Cornered Alfalfa Hopper
Cws	Cutworms	MBB	Mexican Bean Beetle	Wbw	Webworms
FA	Fall Armyworm	PL	Potato Leafhopper	WG	White Grubs
		SCR	Southern Corn Rootworm	Ww	Wireworms

COTTON	State	Post Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Loss (\$1000)
				Loss Per Acre (Units)	Loss Per Acre (\$dollars)	Non-treated Acres (1000)	Cost Per Acre (dollars)	Treated Acres (1000)	Sub-total (\$1000)	
Arizona		M, F, PBw, StB, Aws, CL, LB, Blw	245.00	445.50	132.31	25.00	12.00	220.00	2,640.00	5,947.75
Arkansas		BW, Blw, A, PB	715.00	43.30	13.12	26.07	16.60	575.55	9,554.10	9,896.11
Mississippi		Cotton Insect Complex	955.00	-	-	-	15.00	955.00	14,325.00	14,325.00
Nevada		LB, Blw, SpM, T	2.20	-	-	-	5.00	0.99	4.95	4.95
New Mexico		PBw, Blw, LB, F, T, A	120.00	32.00	*13.34	45.00	8.00	30.00	240.00	840.30
Oklahoma		BW, Blw, F	370.00	87.90	18.44	156.92	13.15	172.75	2,271.62	5,165.28
Tennessee		BW, Blw, PB, M	220.00	135.00	*58.88	70.00	12.00	100.00	1,200.00	5,321.60
Texas		A, SpM, T, F, TB, Blw, PBw, BW, Cws, Ch	1,600.00	94.25	*20.89	810.00	6.00	1,350.00	8,100.00	25,020.90
		See Legend V				Total			38,335.67	66,521.89

*Figure includes quality loss.

Crop	State	Pest Complex	Total Acres Protected (1000)	Yield Loss			Control Cost			Total Loss (\$1000)
				Loss per Acre (Units)	Loss per Acre (dollars)	Non-treated Acres (1000)	Subtotal (1000)	Cost Per Acre (dollars)	Treated Acres (1000)	Subtotal (\$1000)

LEGEND V - COTTON PEST COMPLEX

A	Aphids	Cws	Cutworms	PEW	Pink Bollworm
Aw	Armyworms	F	Fleas	SPM	Spider Mites
Blw	Bollworm	Ch	Grasshoppers	StB	Stink Bugs
BW	Boll Weevil	LB	Lygus Bugs	T	Trips
CL	Cabbage Looper	M	Mites	TB	Tobacco Budworm
		FB	Plant Bugs		

TOBACCO											
Maryland	GPA, TFB, TH		33.00	Lbs. 220.00	140.80	8.00	1,126.40	10.00	25.00	250.00	1,376.40
See Legend VI				Total			1,126.40			250.00	1,376.40

LEGEND VI - TOBACCO PEST COMPLEX

TFB	Tobacco Flea Beetle	TH	Tobacco Hornworm
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SUGARBEETS											
Arizona	CL, BA, A, M, L, SMC	11.65	0.33	*5.13	2.00	*10.26		4.10	6.00	24.60	34.86
Minnesota	BW, Cws, BLM, SBRA	128.10	-	-	-	-		4.00	1.00	4.00	4.00
Nebraska	Wbw, L, Gh, Ww, FB, SpM	62.80	1.63	21.52	10.00	215.20		3.50	10.00	35.00	250.20
North Dakota	SBRM, Ww	78.30	3.30	49.50	10.00	495.00		4.15	20.00	83.00	578.00
See Legend VII				Subtotal		720.46				146.60	867.06

FLAXSEED											
North Dakota	Gh	1,159.00	Bu. 1.60	4.64	10.00	46.40		2.10	15.00	31.50	77.90
See Legend VII				Subtotal		46.40				31.50	77.90

*Figure includes quality loss.

Crop	State	Pest Complex	Total Acres Produced (1000)	Yield Loss		Control Cost			Sub-total (\$1000)	Total Loss (\$1000)	
				Loss Per Acre (Units)	Non-treated Acres (1000)	Cost Per Acre (dollars)	Treated Acres (1000)				
SAFFLOWER											
Arizona	A, LB, L, T, Aws, Cws, M, StB		96.00	Lbs.							
	See Legend VII			171.50	7.03	16.00	112.48	4.60	80.00	368.00	480.48
				Subtotal			112.48			368.00	480.48
				Total			879.34			316.10	1,125.44
LEGEND VII - SUGARBET, FLAX, AND SAFFLOWER PEST COMPLEX											
	A	Aphids		FB Flea Beetles				SBRM Sugar-Beet Root Maggot			
	Aws	Armyworms		Gh Grasshoppers				SMC Salt-Marsh Caterpillar			
	BA	Beet Armyworm		LB Lygus Bugs				SpM Spider Mites			
	BLM	Beet Leaf Miner		L Leafhoppers				StB Stink Bugs			
	BWw	Beet Webworm		M Mites				T Thrips			
	CL	Cabbage Looper		SBRA Sugar-Beet Root Aphid				Wbw Wireworms			
	Cws	Cutworms						Ww wireworms			
POTATOES											
Arizona	PP, L, Cws, A		10.90	Cwt.							
				17.50	44.27	0.90	39.85	8.20	8.00	65.60	105.45
Minnesota	PL, PFB, Ww, AL		105.20	12.80	19.33	20.00	386.60	6.25	80.00	500.00	886.60
Nebraska	CPB, PL, PB, BB, PP, PFB, Ww, G, Gh		10.40	29.96	44.64	1.30	58.03	6.20	8.20	50.84	108.87
Nevada	CL, N		0.70	-	-	-	-	48.00	0.68	32.58	32.58
New Jersey	CPB, PoA, GPA, ECB		16.00	-	-	-	-	21.00	16.00	336.00	336.00
North Dakota	Potato Insect Complex		118.00	4.60	5.50	6.00	33.00	6.40	100.00	640.00	673.00
Wisconsin	PL, A, PFB, AL		57.00	140.00	322.00	7.00	2,254.00	12.00	50.00	600.00	2,854.00
	See Legend VIII			Subtotal			2,771.48			2,225.02	4,996.50
TOMATOES (Commercial)											
New Jersey	CPB, GPA, PoA, VF		21.10	-	-	-	-	30.00	21.10	633.00	633.00
	See Legend VIII			Subtotal			-			633.00	633.00

Crop	State	Pest Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Loss (\$1000)	
				Loss Per Acre (Units)	Loss Per Acre (dollars)	Non-treated Acres (1000)	Subtotal (\$1000)	Cost Per Acre (dollars)	Treated Acres (1000)		Subtotal (\$1000)
PEPPERS											
New Jersey	GPA, PM, TSM, ECB		7.70	Cwt. 6.00	*48.00	2.70	*129.60	20.00	5.00	100.00	229.60
	See Legend VIII				Subtotal		129.60			100.00	229.60
EGGPLANT											
Hawaii	GHW, GPA, CSM, PT		0.034	Cwt. -	-	-	-	108.00	0.034	3.67	3.67
New Jersey	CPB, GPA, PoA, TSM, ECB		1.40	12.00	*67.20	0.70	*47.04	21.00	0.70	14.70	61.74
	See Legend VIII				Subtotal		47.04			18.37	65.41
					Total		2,948.12			2,976.39	5,924.51
LEGEND VIII - POTATO, TOMATO, PEPPER, AND EGGPLANT PEST COMPLEX											
A	Aphids	FB	Flea Beetles	PL	Potato Leafhopper						
AL	Aster Leafhopper	G	Grubs	PM	Pepper Maggot						
BB	Blister Beetles	Gh	Grasshoppers	PoA	Potato Aphid						
CL	Cabbage Looper	GHW	Greenhouse Whitefly	pp	Potato Psyllid						
CPB	Colorado Potato Beetle	GPA	Green Peach Aphid	PT	Potato Tuberworm						
CSM	Carmine Spider Mite	L	Leafhoppers	TSM	Two-Spotted Spider Mite						
Cws	Cutworms	N	Nematodes	VF	Vinegar Flies						
ECB	European Corn Borer	PFB	Potato Flea Beetle	Ww	Wireworms						
BEANS (Field)											
Nebraska	WBG, Gh, BLB, L, A		71.00	Cwt. 2.80	21.00	2.00	42.00	3.50	6.00	21.00	63.00
	See Legend IX				Subtotal		42.00			21.00	63.00
BEANS (Snap)											
Wisconsin	LB, PL		43.00	-	-	-	-	2.75	25.95	71.37	71.37
	See Legend IX				Subtotal		-			71.37	71.37

*Figure includes quality loss.

Crop	State	Pest Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Loss (\$1000)
				Loss Per Acre (Units)	Loss Per Acre (dollars)	Non-treated Acres (1000)	Subtotal	Cost Per Acre (dollars)	Treated Acres (1000)	
BEANS (Lima)										
Wisconsin	LB, PL		8.90	-	-	-	2.50	8.47	21.19	21.19
See Legend IX				Subtotal			21.19			21.19
PEAS										
(Canning)										
Minnesota	PA		72.80	-	-	-	2.00	9.14	18.28	18.28
Wisconsin	Aws, PA, CW		125.50	-	-	-	2.00	8.53	17.07	17.07
See Legend IX				Subtotal			35.35			35.35
				Total			148.91			148.91
										190.91

LEGEND IX - BEAN AND PEA PEST COMPLEX

A Aphids
 Aws Armyworms
 BLB Bean Leaf Beetle
 CW Clover Weevils
 Gh Grasshoppers
 LB Lygus Bugs
 L Leafhoppers
 PA Pea Aphid
 PL Potato Leafhopper
 WEC Western Bean Cutworm

CABBAGE											
Arizona	CL, A	1.60	Cwt.	17.00	73.10	0.40	29.24	8.00	1.20	9.60	38.84
New Jersey	CL, IC, DM, CM	2.00	200.00	*480.00	0.20	96.00	42.00	1.80	75.60	171.60	
Wisconsin	CL, IC, CM, DM	6.30	-	-	-	-	25.00	6.30	157.50	157.50	
See Legend X				Subtotal			125.24	242.70		367.94	
CAULIFLOWER											
Arizona	A, CL, Cws	0.65	Cwt.	11.16	145.08	0.05	7.23	8.00	0.60	4.80	12.05
See Legend X				Subtotal			7.23	4.80		12.05	
BROCCOLI											
Arizona	A, Cws, CL	0.46	Cwt.	13.00	152.10	0.16	24.34	8.00	0.30	2.40	26.74
See Legend X				Subtotal			24.34	2.40		26.74	

*Figure includes quality loss.

Crop	State	Pest Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Loss (\$1000)	
				Loss per Acre (Units)	Loss per Acre (dollars)	Non-treated Acres (1000)	Sub-total (\$1000)	Cost per Acre (dollars)	Treated Acres (1000)		Sub-total (\$1000)
RADISH (Daikon)											
Hawaii	DM, CWw, GPA, BC, TA		0.26	-	-	-	-	51.00	0.26	13.26	13.26
	See Legend X					Subtotal	-			13.26	13.26
CANTALOUPE											
Arizona	A, L, T, M, CBs		12.40	Cwt. 17.55	145.14	1.40	203.20	15.00	11.00	165.00	368.20
	See Legend X					Subtotal	203.20			165.00	368.20
CUCUMBERS											
Hawaii	LMF, MF, CSM, GHW		0.18	-	-	-	-	87.00	0.18	15.66	15.66
Wisconsin	StCB, W		17.10	Tons 0.50	2.50	0.50	1.25	3.00	3.50	10.50	11.75
	See Legend X					Subtotal	1.25			26.16	27.41
MELONS											
Arizona	A, CBs, L, M, T		1.30	Cwt. 7.00	58.80	0.10	5.88	15.00	1.20	18.00	23.88
	See Legend X					Subtotal	5.88			18.00	23.88
WATERMELONS											
Arizona	A, CBs, L, M, T		3.10	Cwt. 17.00	56.95	0.60	34.17	10.00	2.50	25.00	59.17
Hawaii	LMF, MF, CSM		0.18	-	-	-	-	158.00	0.18	28.44	28.44
	See Legend X					Subtotal	34.17			53.44	87.61
ASPARAGUS (Processing)											
New Jersey	AB, SAB, FT, OT		18.30	Tons 0.05	*17.45	3.00	*52.35	7.50	1.00	7.50	59.85
	See Legend X					Subtotal	52.35			7.50	59.85

*Figure includes quality loss.

Crop	State	Pest Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Loss (\$1000)	
				Loss Per Acre (Units)	Loss Per Acre (dollars)	Non-treated Acres (1000)	Sub-total (\$1000)	Cost Per Acre (dollars)	Treated Acres (1000)		Sub-total (\$1000)
CARROTS											
Arizona	A, VW, AWS		3.80	Cwt. 9.00	33.75	0.80	27.00	4.75	1.00	4.75	31.75
Wisconsin	AL		2.90	-	*975.00	0.90	*877.50	25.00	2.00	50.00	927.50
	See Legend X					Subtotal	904.50			54.75	959.25
CELERY											
Hawaii	CMS, A, CA,		0.070	-	-	-	-	118.00	0.070	8.26	8.26
	See Legend X					Subtotal	-			8.26	8.26
LETTUCE											
Arizona	CL, BA, A, Cws, CE, SMC, T		47.20	Cwt. 54.00	262.98	2.20	578.56	18.00	45.00	810.00	1,388.56
New Mexico (Fall) (Spring)	CL, A		4.60	Boxes 37.50	*259.15	0.10	*25.92	75.00	4.50	337.50	363.42
	CL, A		3.10	26.00	*179.65	0.10	*17.97	30.00	3.00	90.00	107.97
Wisconsin	AL		1.90	Cwt. 200.00	1,040.00	0.57	592.80	25.00	1.33	33.25	626.05
	See Legend X					Subtotal	1,215.25			1,270.75	2,486.00
ONIONS											
Arizona	OT, AWS, Cws		2.80	Cwt. 29.60	89.98	0.20	18.00	4.00	0.80	3.20	21.20
Hawaii	LMF, BA		0.05	-	-	-	-	46.00	0.05	2.30	2.30
Nevada	T, OM, N		0.15	-	-	-	-	3.96	***0.26	1.03	1.03
	See Legend X					Subtotal	18.00			6.53	24.53
				Total			2,591.43			1,873.55	4,464.98

*Figure includes quality loss.

***Total acreage treated over 1.5 times.

Crop	State	Pest Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Loss (\$1000)
				Loss Per Acre (Units)	Loss Per Acre (dollars)	Non-treated Acres (1000)	Sub-total (\$1000)	Cost Per Acre (dollars)	Treated Acres (1000)	

LEGEND X - COLE CROP, CUCURBIT, AND GENERAL VEGETABLE PEST COMPLEX

A	Aphids	CSM	Carmine Spider Mite	MF	Meion Fly					
AB	Asparagus Beetles	CWS	Cutworms	N	Nematodes					
AL	Aster Leafhopper	CW	Cabbage Webworm	OM	Onion Maggot					
AWs	Armyworms	DM	Diamondback Moth	OT	Onion Thrrips					
BA	Beet Armyworm	FT	Flower Thrrips	SAB	Spotted Asparagus Beetle					
BC	Black Cutworm	GHW	Greenhouse Whitefly	SMC	Salt-Marsh Caterpillar					
CA	Celery Aphid	GPA	Green Peach Aphid	StCB	Striped Cucumber Beetle					
		IC	Imported Cabbageworm	T	Thrips					
CBS	Cucumber Beetles	L	Leafhoppers	TA	Turnip Aphid					
CE	Corn Earworm	LMF	Leaf Miner Flies	VW	Vegetable Weevil					
CL	Cabbage Looper	M	Mites	W	Weevils					
CM	Cabbage Maggot									

APPLES										
Arkansas	CdM, M, PC, RAA, LR	1.80	-	-	-	-	-	55.00	1.80	99.00
Maryland	CdM, PC, A, SpM	-	-	-	-	-	-	0.40/Bu. *1,550 Bu.	620.00	620.00
Minnesota	AM, CdM, PC, M	2.00	-	-	-	-	-	100.00	2.00	200.00
Virginia	A, CdM, PC, M	-	-	-	-	-	-	0.20/Bu. *8,000 Bu.	1,600.00	1,600.00
Wisconsin	AM, CdM, PC	-	-	-	-	-	-	0.012/Lb. *50,400 Lbs.	621.70	621.70
See Legend XI			Subtotal			-	-	3,140.70	3,140.70	

PEACHES										
Arkansas	OFM, TPB, StB, PTB, PC, Sc	4.50	-	-	-	-	-	40.00	4.50	180.00
See Legend XI			Subtotal			-	-	180.00	180.00	
			Total			-	-	3,320.70	3,320.70	

LEGEND XI - FRUIT PEST COMPLEX

A	Aphids	M	Mites	Sc	Scales
AM	Apple Maggot	OFM	Oriental Fruit Moth	SpM	Spider Mites
CdM	Codling Moth	PC	Plum Curculio	StB	Stink Bugs
LR	Leaf Rollers	PTB	Peach Tree Borer	TPB	Tarnished Plant Bug
		RAA	Rosy Apple Aphid		

*Units per thousand.

Crop	State	Pest Complex	Total Acres Presettled (1000)	Yield Loss			Control Cost			Total Losses (\$1000)	
				Loss Per Acres (Units)	Loss Per Acres (dollars)	Non- treated Acres (1000)	Sub- total (\$1000)	Cost Per Acres (dollars)	Treated Acres (1000)		Sub- total (\$1000)
GRAPEFRUIT											
Arizona	CT, OD, L, M, K		7.57	Boxes 42.50	*95.00	2.30	*218.50	4.00	4.70	18.80	237.30
	See Legend XII						Subtotal			18.80	237.30
LEMONS											
Arizona	M, CT, L		8.81	Boxes 31.30	*180.38	2.81	*506.87	15.00	6.00	90.00	596.87
	See Legend XII						Subtotal			90.00	596.87
ORANGES											
Arizona	CT, M, A, L, Sc		24.96	Boxes 43.50	*241.63	6.96	*1,681.74	18.75	18.00	337.50	2,019.24
	See Legend XII						Subtotal			337.50	2,019.24
BANANAS											
Hawaii	B&p, SpM, BGT		1.01	-	-	-	-	3.50	0.10	0.35	0.35
	See Legend XII						Subtotal			0.35	0.35
COFFEE											
Hawaii	GS, MFF, BHA, LLA		4.71	Lbs. 14.00	3.50	1.70	5.95	2.00	0.60	1.20	7.15
	See Legend XII						Subtotal			1.20	7.15
							Total			447.85	2,860.91
							GRAND TOTAL			106,419.75	252,102.46

LEGEND XII - CITRUS, BANANA, AND COFFEE PEST COMPLEX

A	Aphids	GS	Green Scale	M	Mites
B&P	Banana Aphid	K	Katydid	MFF	Mediterranean Fruit Fly
BGT	Banded Greenhouse Thrips	L	Leafhoppers	OD	Orange-Dog
BHA	Big-Headed Ant	LLA	Long-Legged Ant	Sc	Scutes
CT	Citrus Thrips			SpM	Spider Mites

* Figure includes quality loss.

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Hyattsville, Maryland 20782

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VOL. 18 No. 44

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

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Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

SPOTTED ALFALFA APHID increasing on alfalfa in Maricopa County, Arizona, and in northwest Arkansas. (p. 1031).

LESSER CORNSTALK BORER destroyed rye acreage in Mobile and Barbour Counties, Alabama. (p. 1032).

IMPORTED CABBAGEWORM troublesome on commercial cabbage in Baldwin County, Alabama. (p. 1035).

PEAR PSYLLA infestation one of heaviest in recent years in orchards in Hood River County, Oregon. (p. 1035).

TWIG GIRDLER damage widespread on shade trees in many areas of Texas. (p. 1038).

Total of 1,112 SCREW-WORM cases reported in southwest U.S. October 20-26. (p. 1039).

Detection

A CONIFER APHID reported for first time in Maryland. (p. 1038).

For new county and island records see page 1041.

Prediction

Severe PALE WESTERN CUTWORM outbreak on small grain predicted for spring 1969 in western Nebraska. (p. 1032).

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WEATHER OF THE WEEK ENDING OCTOBER 28

HIGHLIGHTS: Canadian cold continued to pour into the East bringing the coolest weather since March to some areas. Hard freezes occurred in the Deep South. Snow flurries occurred from the Great Lakes to the northern Appalachians. Warm air melted the snow below 5,000 feet in the Cascades.

PRECIPITATION: Scattered thundershowers occurred from Wisconsin to northern Texas on Monday, October 21, in connection with a cold front which was advancing across mid-America. Several spots in Iowa and Missouri received more than an inch but totals generally were much less. Light showers occurred from the Far Northwest to the Dakotas early in the week. The midweek brought rain to the Great Lakes region and the Northeast. Also generous showers to the Texas coast and the southern portion of the Florida Peninsula with 1.04 inches falling at West Palm Beach in less than an hour on Wednesday. Numerous thunderstorms occurred in the Northeast Thursday evening. Amounts ranged widely but a few spots received more than 1 inch. Williamsport, Pennsylvania, received 1.70 inches. Light snow flurries fell from the Great Lakes region to the northern Appalachians on Friday accumulating to 1 inch at Sault Ste. Marie, Michigan, before melting. Light snow fell from the Great Lakes region to the Appalachians on Friday and by Saturday morning had whitened some mountain areas in West Virginia. Light precipitation fell over the North Central States on Sunday - snow and rain mixed in parts of Minnesota and Michigan; light rain as far south as Missouri. Wide areas from California to the western Great Plains received no rain. Some light sprinkles fell in the western Great Plains.

TEMPERATURE: Fine autumn weather with mild sunny days and clear cool nights prevailed over much of the Nation early in the week with subfreezing temperatures on most mornings over most of the Great Basin and the Rocky Mountains. Afternoon temperatures along the South ranged from 101° on Wednesday and Thursday at Thermal, California, to the 80's from Arizona to South Carolina. Warming occurred over the West during the week and temperatures averaged a few degrees above normal. In contrast, temperatures over the East dropped sharply as cold air from Canada flowed toward the gulf. Maximum temperatures over the East on Friday ranged from the 40's near the Great Lakes to the 60's along the gulf. Tallahassee, Florida, registered 32° Sunday morning. Warming occurred in the East Sunday afternoon and 60° temperatures were registered as far north as Ohio and Pennsylvania. Some spots along the Ohio River and in the middle Mississippi River Valley averaged 5° to 7° below normal. New England and southward along the Atlantic coast to Cape Hatteras averaged slightly warmer than normal. (Summary supplied by Environmental Data Service, ESSA.)

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

GREENBUG (*Schizaphis graminum* (In broad sense))* - SOUTH DAKOTA - Trace numbers on winter wheat and volunteer oats and barley near Elm Springs, Meade County, and on winter wheat in southeastern Haakon County week ending October 18. Present on winter wheat near Midland, Ottumwa, and north of Milesville, Haakon County; west of Elm Springs, Meade County; and south to northern Washabaugh County week ending October 25. Immature and mature aphids trace in most wheat checked; up to 60 per plant on some plants. Noneconomic, less than 10 per 5 row feet, in fields surveyed. Economic, 30+ per row foot, in portions of winter wheatfields near Ottumwa; total area less than 10 acres. (Jones). MISSOURI - Heavy in wheatfield in Nodaway County; wheat destroyed in small spots throughout field; controls applied. (Thomas). Very light on sorghum in Clinton, Pettis, and Boone Counties. Small colonies infested less than 1 percent of plants. (Munson). OKLAHOMA - Counts per row foot ranged 12-15 in volunteer barley in Cotton County, averaged 1.5 in wheat in Tillman County, and averaged 3 in wheatfield in Grady County. Survey negative on wheat in 3 fields in Jackson County, 2 fields in Grady County, and one field in Cotton County. Light in scattered wheatfields in Noble County. Most aphids on volunteer plants. (Okla. Coop. Sur.).

ARMYWORM (*Pseudaletia unipuncta*) - MICHIGAN - Moths still active in State; collected 208 at Lenawee County blacklight station October 10-16. (Newman).

BEEF LEAFHOPPER (*Circulifer tenellus*) - UTAH - Numerous; curly-top loss of tomatoes severe in southern Kane County and in lower areas of Garfield County. (Knowlton, Lindsay, Oct. 21).

CORN EARWORM (*Heliothis zea*) - MICHIGAN - Adults increasing as weather continues without killing frost in State; caught 97 at Lenawee County blacklight station October 10-16. (Newman). ARKANSAS - Second and third instars 40-50 per 100 sweeps on Washington County alfalfa. (Boyer, Nasr). COLORADO - Larval infestation about 10 percent in cornfield in Sedgwick area, Sedgwick County. (Johnson, Hantsbarger).

NOCTUID MOTHS (*Heliothis* spp.) - FLORIDA - *H. zea* larvae infested 75 percent of sunflower heads at experimental farm near Gainesville, Alachua County, October 22. *H. virescens* and *H. zea* (ratio 3:1) larval damage heavy on blooms and developing pods on 20 acres of 6-foot-tall pigeon peas near Gainesville; larvae 2-3 per plant. Determined by D.H. Habeck. (Strayer, Habeck).

CORN LEAF APHID (*Rhopalosiphum maidis*) - OKLAHOMA - Ranged 0-5 per row foot on barley in Noble and Kay Counties. (Okla. Coop. Sur.). NEW MEXICO - Very light in Curry and Roosevelt County grain sorghum. (Mathews). NEVADA - Light to medium on barley in Moapa Valley, Clark County. (Yamashita, Zoller).

POTATO PSYLLID (*Paratrioza cockerelli*) - ARIZONA - Moderate on young citrus trees north of Peoria, Maricopa County. (Ariz. Coop. Sur.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - ARIZONA - Buildup noted in most alfalfa in Salt River Valley, Maricopa County; ranged 200-1,000 per 100 sweeps. Heaviest spots from Litchfield Park to Buckeye on west side and Mesa area on east side. (Ariz. Coop. Sur.). ARKANSAS - Increased in northwest area alfalfa; ranged 500-1,000 per 100 sweeps in Washington County. (Boyer, Nasr).

* According to recent taxonomic studies by L.M. Russell. This aphid on sorghum appears to be this species.

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NORTH DAKOTA - Fall abundance survey completed in State. Populations increased in Dickey, Ransom, and Sargent Counties compared with 1967 but decreased in Cass and Richland Counties. Larvae ranged 0-510 (average 112) per 100 plants on 0-84 (average 40) percent of corn plants. Larvae 0-240 (average 87) per 100 plants on 8-60 (average 34) percent of plants in 9 cornfields in Stark, Dunn, Burleigh, Stutsman, Traill, Ramsey, Pierce, Ward, and Pembina Counties. (Brandvik et al.). SOUTH DAKOTA - Fall abundance survey on corn completed in 10 southeast and south-central counties. Populations minimal in Aurora, Bon Homme, Brule, Charles Mix, and Gregory Counties; light and reduced from 1967 levels in Davison and Hutchinson Counties; increased slightly in Douglas County; no larvae or damage in fields surveyed in Lyman and Tripp Counties. Larvae per 100 stalks by county: Aurora 0-36 (average 18); Bon Homme 0-76 (average 26); Brule and Charles Mix 0-2 (average 0.5); Davison 2-144 (average 63.5); Douglas 12-100 (average 61.5); Gregory 0-12 (average 3.5); Hutchinson 2-150 (average 50.7). Infestations ranged up to 76 percent in fields surveyed. (Jones). WISCONSIN - Fall abundance survey on corn completed in State. Larvae per 100 plants by district: Northeast 48, east-central 25, southeast 49, south-central 73, southwest 47, central 61, north-central 19, northwest 17, and west-central 18. State average 40. (Wis. Ins. Sur., Oct. 18). MICHIGAN - Caught 49 moths October 10-16 at Lenawee County blacklight station. Field survey indicated 75 percent of active larvae in ears. (Newman). ARKANSAS - Limited survey on corn for this species and *Diatraea grandiosella* (southwestern corn borer) in 3 northern districts. Stalk infestations ranged 11.6-29.3 (State average 25.0) percent; larvae ranged 5.8-37.0 (State average 26.3) per 100 stalks; lodged stalks ranged 1.8-8.0 (State average 5.5) percent. Both species heavier in northeast district where acreage more concentrated than in other districts. *O. nubilalis* heavier than in 1967 but lighter than in 1966. Infestations of *D. grandiosella* similar for 1966-1968. Lodged up to 30-40 percent of stalks in some late fields; lodging in early corn heavier than usual this year. (Boyer).

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - NEW MEXICO - Larvae much lighter in corn in northwestern counties this fall than in several years. (N.M. Coop. Rpt.).

WESTERN BEAN CUTWORM (*Loxagrotis albicosta*) - COLORADO - Larvae noted on corn in Sedgwick area, Sedgwick County. Fairly extensive in northeastern area during season. (Johnson, Hantsbarger).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - NEW JERSEY - Two adults collected at Phillipsburg, Warren County, by P.V. Weber September 22, 1967. (Kilgallen). Collected during August 1968 in Atlantic, Burlington, Cumberland, Gloucester, Hunterdon, Middlesex, Monmouth, Salem, Somerset, and Union Counties from blacklight traps, cornsilks, or dahlias and roses. All but Warren are new county records. (Race).

APHIDS - ARIZONA - Ranged 5-100 per sorghum plant on 120 acres at Bowie, Cochise County. (Ariz. Coop. Star.).

SMALL GRAINS

PALE WESTERN CUTWORM (*Agrotis orthogonia*) - NEBRASKA - Moth flights during fall of 1968 heaviest ever recorded. Severe outbreak predicted on small grain in several southwestern and panhandle counties in spring of 1969. (Pruess).

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - ALABAMA - Heavy larval infestations and dry weather caused loss of rye stands on several farms in Mobile County; additional acreage lost in Barbour County. (Vickery, Walton).

TURF, PASTURES, RANGELAND

SUGARCANE BORER (Diatraea saccharalis) - FLORIDA - Damage heavy on pampasgrass at Samsula, Volusia County, in early October. (Greene). Healthy plants reduced from 180,000 to 60,000 in 30-acre field during one year; 50 percent of reduction due to "knocking back" of plumes. (Fla. Coop. Sur.).

SOUTHERN CHINCH BUG (Blissus insularis) - TEXAS - Heavy in lawns in Bastrop, Travis, Guadalupe, Comal, and Bexar Counties week ending October 11. (Green).

APHIDS - UTAH - Capitophorus spp. and Aphis spp. extremely numerous on rabbitbrush at Bountiful, Davis County, and Logan Green Canyon, Cache County. (Knowlton, Oct. 25).

FORAGE LEGUMES

BEE T ARMYWORM (Spodoptera exigua) - ARIZONA - Averaged about 250 per 100 sweeps in most alfalfa at Yuma, Yuma County; averaged 1,000 per 100 sweeps in few fields. (Ariz. Coop. Sur.). NEW MEXICO - Larvae averaged 2-4 per 25 sweeps in Bernalillo County alfalfa. (Heninger).

GREEN CLOVERWORM (Plathypena scabra) - MICHIGAN - Moths still numerous at Lenawee County blacklight station; caught 46 moths October 10-16. (Newman). ARKANSAS - Light, 10-15 per 100 sweeps, in Washington County alfalfa. (Boyer, Nasr).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - ARIZONA - Averaged 150 per 100 sweeps in alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.).

ALFALFA CATERPILLAR (Colias eurytheme) - NEW MEXICO - Larvae averaged 1-3 per 25 sweeps in alfalfa near Albuquerque, Bernalillo County; adults abundant. (Heninger). ARKANSAS - Light, 15-20 per 100 sweeps, in Washington County alfalfa. (Boyer, Nasr).

PEA APHID (Acyrtosiphon pisum) - ARIZONA - Highest counts, 2,500 per 100 sweeps, in alfalfa at Elfrida, Cochise County. (Ariz. Coop. Sur.). ARKANSAS - No significant increase on alfalfa in northwest area; 40-50 per 100 sweeps in Washington County. (Boyer, Nasr). WISCONSIN - Populations remain static on alfalfa in State due to prevalence of parasites and lady beetles. A. pisum averaged about 8 per sweep, damsel bugs and lady beetles averaged about 5 per 50 sweeps. About half of population on overwintering hosts either contain or are laying eggs. (Wis. Ins. Sur., Oct. 18).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Average per 100 sweeps in alfalfa by county: Cochise, 450 at San Simon; Graham, 250 at Safford; Yuma, 800 in one field at Yuma. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - ARIZONA - Average per 100 sweeps in alfalfa by county: Graham, 225 at Safford; Yuma, adults and nymphs 500 in field at Yuma; Maricopa, adults and nymphs 250. (Ariz. Coop. Sur.). UTAH - Adults, 1-2 per 10 sweeps, still active in Cache County alfalfa. (Knowlton, Oct. 21).

TARNISHED PLANT BUG (Lygus lineolaris) - OKLAHOMA - Averaged 12 per 10 sweeps in alfalfa in Grant County. (Okla. Coop. Sur.). WISCONSIN - Adults prevalent, 30 per 50 sweeps, in most alfalfa in State. (Wis. Ins. Sur., Oct. 18).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - WISCONSIN - Adults averaged about 10 per 50 sweeps in most alfalfa in State. (Wis. Ins. Sur., Oct. 18).

CLOVER ROOT CURCULIO (Sitona hispidulus) - WISCONSIN - Caused most of weevil feeding damage in many Columbia, Sauk, and Richland County alfalfa fields. First and second instars of Hypera punctata (clover leaf weevil) caused some damage. (Wis. Ins. Sur., Oct. 18).

THRIPS (*Frankliniella* spp.) - ARIZONA - Averaged 700 per 100 sweeps in alfalfa at Bowie and San Simon, Cochise County. (Ariz. Coop. Sur.).

SLUGS - WISCONSIN - Prevalent in some low alfalfa fields in Columbia, Dodge, and Ozaukee Counties. (Wis. Ins. Sur.).

SOYBEANS

A CERAMBYCID BEETLE (*Dectes spinosus*) - MISSOURI - Larvae infested 30-80 percent of plants in infested fields in Dunklin County. (Munson).

COTTON

SALT-MARSH CATERPILLAR (*Estigmene acrea*) - ARIZONA - Light in all cotton-growing areas of Graham County. (Ariz. Coop. Sur.).

SUGARBEETS

LEAFHOPPERS (*Empoasca* spp.) - ARIZONA - Averaged 8 per plant in Stewart District, Cochise County. (Ariz. Coop. Sur.).

SUGAR-BEET ROOT APHID (*Pemphigus populivenerae*) - NORTH DAKOTA - Adults evident in Mandan area, Morton County. (McBride).

MISCELLANEOUS FIELD CROPS

HOP APHID (*Phorodon humuli*) - WASHINGTON - Large flight of alatae September 28 at Yakima, Yakima County. (Landis).

SPOTTED CUCUMBER BEETLE (*Diabrotica undecimpunctata howardi*) - OKLAHOMA - Averaged 15 per plant on commercial sunflowers in Major County. (Okla. Coop. Sur.).

A NYMPHALID BUTTERFLY (*Chlosyne lacinia*) - OKLAHOMA - Larval defoliation moderate to occasional commercial sunflower plants in Major County. (Okla. Coop. Sur.).

POTATOES, TOMATOES, PEPPERS

POTATO TUBERWORM (*Phthorimaea operculella*) - ALABAMA - Larvae heavy and mining leaves in 5-acre fall potato field near Fairhope, Baldwin County; egg laying continues; controls in progress. (Leeper et al.).

MEXICAN MEALYBUG (*Phenacoccus gossypii*) - CALIFORNIA - Medium on eggplants at Turlock, Stanislaus County. (Cal. Coop. Rpt.).

BEANS AND PEAS

BEAN LEAF ROLLER (*Urbanus proteus*) - CALIFORNIA - Larvae damaged kidney beans in San Diego County; only periodic problem in State in past years. (Cal. Coop. Rpt.).
FLORIDA - Adults very common in snap beans since October 1 in State; eggs averaged 8 per plant. (Greene).

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - ALABAMA - Larval damage serious to 10-acre commercial pea field in Coffee County; about 50 percent of plants damaged. Total loss to crop about 30 percent. (Speed).

NOCTUID MOTHS (*Heliothis* spp.) - ALABAMA - Larvae heavy and feeding on pods and peas in large pea field in southern Mobile County; 51 larvae collected in 100-foot row (average one per 2 feet). (Seibels, Bolton).

PEA WEEVIL (Bruchus pisorum) - CALIFORNIA - Adults medium in snow pea seeds in Grass Valley, Nevada County. (Cal. Coop. Rpt.).

COLE CROPS

IMPORTED CABBAGEWORM (Pieris rapae) - ALABAMA - Larvae heavy, damaging collards and other cole crops in gardens in Lee, Macon, and Tallapoosa Counties. This species and other leaf feeders troublesome to commercial cabbage growers in Baldwin County. (Barwood et al.). NEW MEXICO - Larvae averaged 0-3 per plant in cauliflower in Bernalillo County. (Heninger). CALIFORNIA - Medium on collard plantings at Davis, Yolo County. (Cal. Coop. Rpt.).

CABBAGE LOOPER (Trichoplusia ni) - MICHIGAN - Caught 78 moths at Lenawee County blacklight station October 10-16. (Newman). ARIZONA - Larvae spotty, 3 per row foot, on 4-inch-high broccoli plants at Glendale, Maricopa County. (Ariz. Coop. Sur.).

HARLEQUIN BUG (Murgantia histrionica) - ALABAMA - Numerous on commercial collard planting in Mobile County. (Seibels, Brackin).

CABBAGE APHID (Brevicoryne brassicae) - NEW MEXICO - Mostly light to moderate on cauliflower at Albuquerque, Bernalillo County. (Heninger).

CUCURBITS

GRANULATE CUTWORM (Feltia subterranea) - CALIFORNIA - Medium in cucumbers at Waterford, Stanislaus County. (Cal. Coop. Rpt.).

SOUTHERN GREEN STINK BUG (Nezara viridula) - ALABAMA - Adults migrated to late squash and eggplants on farm in Mobile County. (Seibels, Brackin).

GENERAL VEGETABLES

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Controls continued on lettuce in order to maintain good quality; egg laying activity statewide. (Ariz. Coop. Sur.).

NOCTUID MOTHS - MICHIGAN - Caught 194 Agrotis ipsilon (black cutworm), 241 Peridroma saucia (variegated cutworm), and 19 Amathes c-nigrum (spotted cutworm) at Lenawee County blacklight station October 10-16. (Newman).

LEAF-FOOTED BUG (Leptoglossus phyllopus) - ALABAMA - Adults heavy in older okra plantings on farm in Mobile County. Light on late okra pods as far north as Montgomery County. (Seibels et al.).

DECIDUOUS FRUITS AND NUTS

PEAR PSYLLA (Psylla pyricola) - OREGON - Overwintering forms extremely abundant in Hood River area, Hood River County, particularly in improperly treated orchards. Apparently one of heaviest infestations in recent years. (Zwick).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - WISCONSIN - Returning to apple trees to overwinter; colonies forming. (Wis. Ins. Sur., Oct. 18). INDIANA - Alates more common as return to apple trees occurs at Vincennes. (Dolphin, Oct. 21).

WOOLLY APPLE APHID (Eriosoma lanigerum) - ARIZONA - Heavy on new apple growth at Safford, Graham County. (Ariz. Coop. Sur.).

WHITE PEACH SCALE (*Pseudaulacaspis pentagona*) - ALABAMA - Heavy on several peach trees in orchard at Fairhope, Baldwin County; very heavy on many peach trees and native persimmon trees in Baldwin and Mobile Counties. (Leeper et al.).

FORBES SCALE (*Aspidiotus forbesi*) - CALIFORNIA - Heavy on 50-acre quince planting at Florin, Sacramento County. *A. forbesi* not common and heavy infestation on large acreage very uncommon. (Cal. Coop. Rpt.).

TWIG GIRDLER (*Oncideres cingulata*) - TEXAS - Damage extensive on pecan and fruit trees in Wilson County past 2 weeks. (Bippert).

SCARABS (*Pleocomma* spp.) - OREGON - Flights of *P. minor* nearing end in Hood River area, Hood River County. First *P. crinita* capture of season; heavy flight of probably this species noted by one observer. *P. oregonensis* not detected at The Dalles, Wasco County. (Fisher et al.).

APPLE MAGGOT (*Rhagoletis pomonella*) - INDIANA - Adult captures light (25) on stickyboards at Vincennes October 15-21. (Dolphin).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - INDIANA - Some adults still active at Vincennes; collected 22 males in virgin female traps October 15-21. (Dolphin).

LESSER PEACH TREE BORER (*Synanthedon pictipes*) - INDIANA - Collected only 6 males in virgin female traps in orchard at Vincennes October 15-21; temperature favorable for flight. (Dolphin).

EUROPEAN RED MITE (*Panonychus ulmi*) - UTAH - More numerous than usual in orchards in Utah County; generally lighter for remainder of State. (Davis, Oct. 21). INDIANA - Populations light in orchards where buildup heavy during growing season at Vincennes. Eggs 2.2-3.7, immatures 0.6-1.6, and adults 0.4 per leaf in one commercial orchard. Egg laying still in progress. (Dolphin, Oct. 21).

SPIDER MITES - UTAH - Outbreaks of *Tetranychus* sp. and *T. mcDanieli* a little late in development but about normal for season. *Bryobia rubrioculus* populations down in orchards for about fifth consecutive year in State. (Davis, Oct. 21).

HICKORY SHUCKWORM (*Laspeyresia caryana*) - ALABAMA - Overwintering larvae heavy in pecan shucks in several southeastern counties; damage heavy to pecans in Covington County. (Bagby et al.).

FALL WEBWORM (*Hyphantria cunea*) - TEXAS - Generally light on pecan trees in Bureson, Lee, and Gonzales Counties week ending October 11. Medium to heavy in Travis, Guadalupe, Comal, and Bexar Counties. (Green).

WALNUT SCALE (*Aspidiotus juglansregiae*) - CALIFORNIA - Nymphs and adults heavy on walnut trees at Hilmar. (Cal. Coop. Rpt.).

PECAN WEEVIL (*Curculio caryae*) - OKLAHOMA - Heavy on Mayes County pecans. (Okla. Coop. Sur.). ALABAMA - Larval exit holes in most of first pecans to fall under numerous isolated trees at farm homes in Macon and Russell Counties. Numerous hickory nuts in adjacent trees less affected. (Barwood).

WALNUT HUSK FLY (*Rhagoletis completa*) - UTAH - Larvae severe on English and black walnuts in Salt Lake County and in Tooele area, Tooele County, as of October 21. Numerous in black walnut husks at Farmington, Davis County, as of October 25. (Knowlton).

CITRUS

Citrus Insect Situation in Florida - Mid-October - CITRUS RUST MITE (*Phyllocoptruta oleivora*) infested 64 percent of groves (norm 65 percent); 39 percent economic (norm 37 percent). Population increased and is again at high level. Further increase expected to take population well into high range and above normal for October. Infestations will be higher on fruit than on leaves. Highest districts west, south, and north. TEXAS CITRUS MITE (*Eutetranychus banksi*) infested 15 percent of groves (norm 19 percent); 3 percent economic (norm 3 percent). Increased from very low level of September but is still low and below normal. Gradual increase expected. Highest district north. CITRUS RED MITE (*Panonychus citri*) infested 17 percent of groves (norm 24 percent); 3 percent economic (norm 5 percent). Gradual increase from record low September level underway and will continue. Population expected to remain low and below normal. Highest district west. BLACK SCALE (*Saissetia oleae*) infested 30 percent of groves (norm 35 percent); 6 percent economic (norm 12 percent). Population will remain low and below normal. Highest district east. GLOVER SCALE (*Lepidosaphes gloverii*) infested 35 percent of groves (norm 61 percent); 1 percent economic (norm 9 percent). PURPLE SCALE (*L. beckii*) infested 18 percent of groves (norm 58 percent); 1 percent economic (norm 3 percent). CHAFF SCALE (*Parlatoria pergandii*) infested 16 percent of groves (norm 43 percent); less than 1 percent economic (norm 3 percent). The preceding 3 armored scales will continue below normal and in low range despite gradual increase. YELLOW SCALE (*Aonidiella citrina*) infested 32 percent of groves (norm 57 percent); less than 1 percent economic (norm 7 percent). Population in low range and below average level of past 4 years. Little change expected. An ARMORED SCALE (*Unaspis citri*) infested 14 percent of groves; 1 percent economic. Activity at low level and little change expected. WHITEFLY nymphal forms in 60 percent of groves; 10 percent of groves have economic infestations. Population will remain near normal moderate level for October. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

ORANGE-DOG (*Papilio cresphontes*) - ARIZONA - Young larvae generally active in most young blocks, nurseries, and young backyard plantings in Salt River Valley, Maricopa County, and at Yuma, Yuma County. (Ariz. Coop. Sur.).

A LEAF ROLLER MOTH (*Platynota stultana*) - ARIZONA - Treatments required in nurseries at Yuma, Yuma County. (Ariz. Coop. Sur.).

FERN SCALE (*Pinnaspis aspidistrae*) - FLORIDA - All stages light to heavy on all 356 mixed citrus plants in nursery at Merritt Island, Brevard County, October 18. (Levan).

CITRUS RED MITE (*Panonychus citri*) - ARIZONA - Buildup evident in one untreated grove and in inadequately treated groves in State; adults up to 15 and eggs up to 65 per fruit in some citrus. (Ariz. Coop. Sur.).

ORNAMENTALS

A PIT SCALE (*Cerococcus deklei*) - FLORIDA - All stages general and moderate on all 2,275 nursery hibiscus plants at Coral Gables, Dade County. (Dillon, Dowling, Oct. 14).

MEXICAN MEALYBUG (*Phenacoccus gossypii*) - CALIFORNIA - Heavy on pelargonium and fuschia nursery stock in Grass Valley, Nevada County. (Cal. Coop. Rpt.).

FOREST AND SHADE TREES

NANTUCKET PINE TIP MOTH (*Rhyacionia frustrana*) - TEXAS - Extensive damage to short-leaf and loblolly pine saplings in northeast area during summer. Mined nearly all tips over much of 2,000-acre block near Clarksville, Red River County. Heavy infestations and loss of growth on naturally reseeded pine in old fields. Heavy damage also in Gregg, Shelby, and Upshur Counties. (Ollieu, Mason; For. Pest Activity Rpt., July-Sept.).

SOUTHERN PINE BEETLE (*Dendroctonus frontalis*) - TEXAS - Number of new infestations aerially detected began to decline for first time this year in July. Landowners controlled 1,707 spots containing 117,500 trees for quarter. Controlled 2,567 infestations containing 165,500 trees for calendar year. Average of 68 trees per controlled spot with 48 percent of aerially detected spots eventually controlled. Additional 31,316 trees treated on National forests of State. Bulk of damage on Angelina National Forest with lesser amounts on Tenaha and Yellowpine Districts of Sabine National Forest and Big Thicket District of Sam Houston National Forest. (Ollieu, Mason; For. Pest Activity Rpt., July-Sept.).

BLACK TURPENTINE BEETLE (*Dendroctonus terebrans*) - TEXAS - Outbreak resulted from following in descending order: Logging, lightning, road building, and fire. Outbreaks reported in Houston, Montgomery, Newton, Orange, Panola, San Jacinto, Shelby, Trinity, and Walker Counties. Treated over 1,000 trees and salvaged many others. (Ollieu, Mason; For. Pest Activity Rpt., July-Sept.).

WESTERN PINE BEETLE (*Dendroctonus brevicomis*) - TEXAS - Population at negligible level in ponderosa pine on Black Mountain in Jeff Davis County. (Ollieu, Mason; For. Pest Activity Rpt., July-Sept.).

ENGRAVER BEETLES (*Ips* spp.) - TEXAS - Buildup observed throughout eastern area; normally reaches high in autumn. Trees either cut and sprayed or salvaged in Nacogdoches, Newton, Orange, and Panola Counties. Outbreak lacked last year's intensity. Abundant moisture lessened severity. (Ollieu, Mason; For. Pest Activity Rpt., July-Sept.).

A CECIDOMYIID MIDGE (*Cecidomyia* sp.) - COLORADO - Damage severe on ponderosa pine windbreaks in areas of Yuma, Yuma County, Platner, Washington County, and Rush, El Paso County. (Schmunk).

A CONIFER APHID (*Cinara pinea*) - MARYLAND - Collected by C.W. McComb on Scotch pine in nursery at Westminster, Carroll County, May 27, 1968. Determined by L.M. Russell. This is a new State record. (U. Md., Ent. Dept.).

TWIG GIRDLER (*Oncideres cingulata*) - TEXAS - Widespread damage on shade trees in many areas of State. Light to heavy in Burleson, Lee, Travis, Guadalupe, Comal, and Bexar Counties week ending October 11. Heavy numbers at San Angelo, Tom Green County. (Green, Hyman).

FALL CANKERWORM (*Alsophila pometaria*) - NORTH DAKOTA - Males and females evident on forest and shade trees in Fargo area, Cass County. (McBride).

MAN AND ANIMALS

SCREW-WORM (*Cochliomyia hominivorax*) - Total of 1,112 cases reported in U.S. October 20-26 as follows: TEXAS - Atascosa 23, Bandera 11, Bastrop 1, Bee 9, Bell 1, Bexar 7, Blanco 3, Borden 2, Brewster 3, Briscoe 1, Brooks 10, Brown 3, Burnet 7, Caldwell 3, Callahan 2, Cameron 1, Coke 3, Coleman 7, Comal 8, Comanche 1, Concho 7, Crockett 9, Crosby 1, De Witt 11, Dickens 1, Dimmit 35, Duval 11, Eastland 1, Edwards 23, Erath 1, Fisher 2, Freestone 1, Frio 26, Gillespie 5, Glasscock 4, Goliad 8, Gonzales 3, Guadalupe 4, Hays 5, Hidalgo 28, Howard 1, Irion 1, Jack 2, Jeff Davis 10, Jim Hogg 11, Jim Wells 10, Jones 1, Karnes 10, Kendall 4, Kenedy 5, Kerr 5, Kimble 5, Kinney 65, Kleberg 1, Lampasas 6, La Salle 12, Lee 1, Live Oak 4, Llano 20, Loving 1, Maverick 38, McCulloch 13, Mason 10, Medina 64, Menard 11, Midland 2, Milam 1, McMullen 3, Mills 2, Mitchell 1, Nolan 1, Nueces 4, Palo Pinto 1, Pecos 18, Presidio 4, Real 17, Refugio 3, Runnels 8, San Saba 11, Schleicher 9, Scurry 2, Starr 37, Stephens 1, Sterling 9, Sutton 14, Taylor 1, Terrell 51, Tom Green 7, Travis 2, Uvalde 57, Val Verde 91, Ward 2, Webb 41, Wichita 1, Willacy 3, Williamson 2, Wilson 12, Winkler 3, Zapata 6, Zavala 46; ARIZONA - Cochise 1, Gila 1, Graham 2, Greenlee 2, Maricopa 5, Mohave 3, Pinal 10, Yavapai 1; CALIFORNIA - Imperial 1, Riverside 4, San Luis Obispo 2; NEW MEXICO - Dona Ana 1, Eddy 1, Grant 1, Lea 1. Total of 708 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Baja California 3, Territorio sur de Baja California 47, Sonora 157, Chihuahua 171, Coahuila 139, Nuevo Leon 122, Tamaulipas 69. Total of 51 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 95,418,000; New Mexico 1,974,000; Arizona 9,920,000; California 1,900,000; Mexico 83,280,000. (Anim. Health Div.).

HORN FLY (*Haematobia irritans*) - OKLAHOMA - Averaged 400 per head on cattle checked in Major County; moderate in Bryan and Cleveland Counties. (Okla. Coop. Sur.). UTAH - Moderately severe on cattle throughout Garfield and Kane Counties. (Knowlton, Lindsay, Oct. 21).

MOSQUITOES - TEXAS - *Culex pipiens quinquefasciatus* present throughout Jefferson County. *C. salinarius* dominant in Pleasure Island area, high of 370 trapped twice during September. One heavy *Aedes sollicitans* flight during month; 164 females and over 1,000 males in light trap. *A. vexans* in all traps throughout September. *Psorophora ciliata* at both Beaumont traps. *P. confinnis* annoying for about a week in all portions of county except Port Arthur. *Mansonia perturbans* continued to occur regularly at Port Arthur and Beaumont areas. *Uranotaenia* sp. numerous, particularly in Pleasure Island trap. *U. lowii* continued to outnumber *U. sapphirina* by about 3 to 1. (Jefferson County Mosq. Control Dist.).

HOUSEHOLDS AND STRUCTURES

A FALSE CHINCH BUG (*Nysius raphanus*) - CALIFORNIA - Unusually heavy numbers entering residences in many locations. Immature forms heavy in local areas at Sacramento, Sacramento County; heavy adult numbers entered yards and houses at San Andreas, Calaveras County. (Cal. Coop. Rpt.).

OLD-HOUSE BORER (*Hylotrupes bajulus*) - TENNESSEE - Several larval stages in floor joists and subfloor of six-year-old house at Harriman, Roane County. (Williams).

ASIATIC GARDEN BEETLE (*Maladera castanea*) - PENNSYLVANIA - One specimen in building October 1 in Indiana County for a new county record. (Mallis).

STORED PRODUCTS

PINK SCAVENGER CATERPILLAR (*Sathrobrota rileyi*) - ALABAMA - Larvae 1-15 per ear in all corn examined in Mobile, Baldwin, Monroe, Butler, Crenshaw, Montgomery, Elmore, and Coosa Counties. Heaviest in soft varieties and ears previously damaged by *Heliothis zea* and *Spodoptera frugiperda*. (Estes et al., Oct. 18).

INDIAN-MEAL MOTH (*Plodia interpunctella*) - IOWA - Infested shelled corn in central and northwest areas. (Mast). NEW MEXICO - Light in several locations in sacked and bulk feed in Lea and Eddy Counties. (Mathews).

SQUARE-NECKED GRAIN BEETLE (*Cathartus quadricollis*) - ALABAMA - Adults of this species and *Sitophilus oryzae* (rice weevil) 5-25 per ear in all corn examined in 8 southeast and central counties. Heaviest in fields and patches near storage buildings. Much lighter or absent in larger fields with more resistant varieties. (Estes et al., Oct. 18).

CONFUSED FLOUR BEETLE (*Tribolium confusum*) - NEW MEXICO - Light in several locations in sacked and bulk feed in Lea and Eddy Counties. (Mathews).

BENEFICIAL INSECTS

CONVERGENT LADY BEETLE (*Hippodamia convergens*) - ARKANSAS - Continued active on alfalfa with 50-60 adults and occasional larva in 100 sweeps in Washington County. (Boyer, Nasr). OREGON - Probably this species hibernating in very large numbers in wooded areas north of Silverton, Marion County. (Larson).

GREEN LACEWINGS (*Chrysopa* spp.) - ARKANSAS - Continue active with 8-10 adults and 15-20 larvae in 100 sweeps of Washington County alfalfa. (Boyer, Nasr).

HEMIPTEROUS PREDATORS - FLORIDA - Three *Euthyrhynchus floridanus* (a predaceous stink bug) adults feeding on adults of *Diaprepes abbreviatus* (West Indian sugarcane root borer) at Apopka, Orange County. (Fla. Coop. Sur.). ARKANSAS - *Nabis* spp. continue active with 25-30 in 100 sweeps of Washington County alfalfa. (Boyer). OKLAHOMA - *Arilus cristatus* averaged 1.5 per sunflower plant in Major County. (Okla. Coop. Sur.).

A BRACONID (*Macrocentrus delicatus*) - ARKANSAS - Reared from *Grapholitha molesta* (oriental fruit moth). Collected by W.D. Wylie in Johnson County. Determined by E.P. Rouse. (Boyer).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

CITRUS BLACKFLY (*Aleurocanthus woglumi*) - MEXICO - Biological Control Zone - Inspected 24,764 trees on 397 acres in 4 municipios of Tamaulipas; 199 trees on 7 acres found infested. Chemical Control Zone - Inspected 21,870 trees on 421 acres in 10 municipios of Nuevo Leon and 6 municipios of Tamaulipas; 120 trees found infested, 71 in Linares and 49 in Montemorelos, Nuevo Leon. The 49 trees in Montemorelos are in orchard of about 35,000 trees where delimiting surveys still in progress. Inspections negative on 116 trees on 7 properties in Baja California. (PPC Mex. Reg., Sept. Rpt.).

EUROPEAN CHAFER (*Amphimallon majalis*) - OHIO - Treated 40 acres of soil in Cuyahoga County during September, making total of 280 acres treated this fall. (PPC Cent. Reg.).

GRASSHOPPERS - NEVADA - Adult surveys indicate potential infestations on 131,335 acres of rangeland in 1969; mostly in Elko, Eureka, Humboldt, Lander, Pershing, and White Pine Counties. (Nev. Coop. Rpt.).

MEXICAN FRUIT FLY (*Anastrepha ludens*) - MEXICO - Caught 2 wild males and 5 wild females along with 6,546 sterile males and 10,337 sterile females during 509 inspections of 350 traps at Tijuana, Baja California; one wild male and 2 sterile flies in 598 inspections of 150 traps at Ensenada; 4 sterile flies in 60 traps at Tecate. Released aggregate of 2,630,000 sterile pupae at Tijuana; emergence averaged 86.6 percent. (PPC Mex. Reg., Sept. Rpt.).

MORMON CRICKET (Anabrus simplex) - NEVADA - Adult survey completed September 18 in O'Neil and Pole Creek areas, Elko County, indicated adults scattered throughout survey area. No banding evident. Hatched late, about July 1, in this area (elevation 9,000-10,000 feet). (PPC West. Reg.).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - Boll sampling continued in release and buffer zones in Kern County; 5 samplings of 60,000 bolls each completed. No native infestations yet found but 5 sterile moths trapped in Release Zone II in September. Moth catches continued high during September in Palo Verde Valley, Riverside County; larval infestations continued above 20 percent. Infestations continued to increase beyond 30 percent in Coachella Valley; 1,700 moths trapped per week. Weekly moth catches in 5 traps decreased from 300+ in early September to less than 6 by end of month in Needles area, San Bernardino County. Larval infestations averaged about 9 percent and moths decreased greatly in Imperial Valley, Imperial County. Infestations reached 72 percent September 25 in sterile release plot at Borrego Springs, San Diego County. Late moth catches low in one trap; also recovered 7 sterile moths. (PPC West. Reg.). NEVADA - Collected 12 males October 18 in sex lure traps in Moapa Valley, Clark County. (Yamashita). ARIZONA - Infested 60 percent of small top green bolls in field grown for top-crop maturity at Yuma, Yuma County. Infested all green bolls in 30-acre field at Safford, Graham County. (Ariz. Coop. Sur.).

INSECT DETECTION

New State Record

A CONIFER APHID (Cinara pinea) - MARYLAND - Collected on scotch pine at Westminster, Carroll County, by C. W. McComb May 27, 1968. Det. by L. M. Russell. (p. 1038).

New County and Island Records

GIANT HORNET (Vespa crabro germana) - INDIANA - One adult sight identified by R.T. Huber at Selvin area, Warrick County, September 24, 1968. (Huber).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - NEW JERSEY - Atlantic, Burlington, Cumberland, Gloucester, Hunterdon, Middlesex, Monmouth, Salem, Somerset, and Union Counties. (p. 1032).

ASIATIC GARDEN BEETLE (Maladera castanea) - PENNSYLVANIA - Indiana County. (p. 1039).

BEAN FLY (Melanagromyza phaseoli) - HAWAII - Molokai Island. (p. 1042).

MEALYBUGS and ARMORED SCALES - HAWAII - Hawaii Island. See page 1042.

CORRECTIONS

CEIR 18(41):962 - A SOFT SCALE (Ehrhornia cupressi) should read A MEALYBUG (Ehrhornia cupressi). This same correction should be made in the Index for Volume 17, page 11.

CEIR 18(43):1005 - MOSQUITOES - OKLAHOMA - Delete Anopheles maculipennis.

HAWAII INSECT REPORT

Turf, Pasture - Adults of a GRASS WEBWORM (*Herpetogramma licarsialis*) heavy in pastures at Kapahi and Huleia and on ceilings of some buildings at Lihue, Kauai; damage to turf and pasture grasses light to moderate in scattered areas. Moths heavy on grasses along highways, in pastures, and in some residential areas in windward area of Oahu; damage light to moderate. Moths increasing in light traps on Oahu, especially at Kahuku, Kaaawa, and Kaneohe. (Sugawa, Koreyasu).

Vegetables - BEAN FLY (*Melanagromyza phaseoli*) larvae infested snap bean seedlings in small garden at Kamalo on Molokai for a new island record. (Fujimoto, LaPlante). CHINESE ROSE BEETLE (*Adoretus sinicus*) adults completely defoliated taro and potato plantings at Pepeekeo, Hawaii Island; over 1,000 adults collected in light trap in 4 nights. (Yoshioka). SPOTTED GARDEN SLUG (*Limax maximus*) heavy in vegetable fields and flower gardens in Kula, Maui, at 3,800 feet elevation. (Miyahira).

Ornamentals, Forest Trees - New Island of Hawaii records - A MEALYBUG (*Chaetococcus bambusae*) on bamboo at Hilo. PALM MEALYBUG (*Palmicoccus palmarum*) on *Cocos nucifera* (coconut) and *Chrysaliocarpus* sp. (butterfly palm) at Hilo and Keaau, a MEALYBUG (*Rhizococcus hawaiiensis*) on *Plantago* sp. (plantain) at Waimea, FLORIDA RED SCALE (*Chrysomphalus aonidum*) on *Pinus* sp. (pine) at Keaau, DICTYOSPERMUM SCALE (*C. dictyospermi*) on *Metrosideros* sp. (bottlebrush) at Puna, an ARMORED SCALE (*Florinia florinae*) on *Pinus* sp. at Waimea, an ARMORED SCALE (*Lepidosaphes maskellii*) on *Juniperus* sp. (juniper) at Hilo and Waimea, and ARMORED SCALES (*Octaspidiotus araucariae* and *Pseudoparlatoria giffardi*) on *Araucaria excelsa* (Norfolk Island pine) at Waimea. New host records include GRAY SUGARCANE MEALYBUG (*Dysmicoccus boninsis*) on *Panicum* sp. (witchgrass); *R. hawaiiensis* on *Plantago* sp.; *C. dictyospermi* on *Metrosideros* sp.; *C. aonidum*, *F. florinae*, and an ARMORED SCALE (*Lopholeucaspis cockerelli*) on *Pinus* sp. All collections made by S. Nakahara in January 1968. (Shiroma).

Man and Animals - HORN FLY (*Haematobia irritans*) heavy on dairy cows and calves in pasture in Makawao at 1,700 feet elevation and moderate on beef cattle in upper Olinda at 4,000 feet elevation on Maui. (Miyahira).

Miscellaneous Insects - All stages of a RHOPALID BUG (*Jadera haematoloma*) heavy on balloonvine in 2-acre area at Pearl City, Oahu; few adults 2 months ago. All stages remain heavy on balloonvine at Waipahu, Ewa, and Waianae. Nymphs of a GRASSHOPPER (*Oedaleus abruptus*) remain but in reduced numbers in treated areas of Hickam Air Force Base at Honolulu, Oahu. (Olson et al.).

LIGHT TRAP COLLECTIONS

FLORIDA - Gainesville - 10/19-24, BL - Armyworm (*Pseudaletia unipuncta*) 7, beet armyworm (*Spodoptera exigua*) 22, black cutworm (*Agrotis ipsilon*) 5, corn earworm (*Heliothis zea*) 6, fall armyworm (*Spodoptera frugiperda*) 21, granulate cutworm (*Feltia subterranea*) 17, yellow-striped armyworm (*Prodenia ornithogalli*) 3. Monticello - 10/17-23, BL - Armyworm 23, beet armyworm 3, black cutworm 110, cabbage looper (*Trichoplusia ni*) 45, corn earworm 18, fall armyworm 9, salt-marsh caterpillar (*Estigmene acrea*) 3, tobacco budworm (*M. virescens*) 5, tobacco hornworm (*Manduca sexta*) 2, yellow-striped armyworm 41. MISSISSIPPI - Stoneville - 10/19-23, 2BL, 38-81 F., no precip. - Armyworm 51, beet armyworm 918, black cutworm 20, cabbage looper 1, corn earworm 162, fall armyworm 39, granulate cutworm 40, yellow-striped armyworm 7. MISSOURI - Fair Grove - 10/17-23 - Armyworm 16, beet armyworm 4, black cutworm 11, corn earworm 137, European corn borer (*Ostrinia nubilalis*) 1, yellow-striped armyworm 5.

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG controls applied to winter wheat in Pennington County, South Dakota.
CORN LEAF APHID heavy on barley in Nye County, Nevada. (p. 1045).

EUROPEAN CORN BORER heavy on corn in several counties of South Carolina.
BLACK CUTWORM problem may develop on corn in some areas of Wisconsin in 1969.
(pp. 1045-1046).

PECAN WEEVIL continues heavy on pecans in Mayes County, Oklahoma. (p. 1049).

SOUTHERN PINE BEETLE most significant problem on pine in North Carolina.
(p. 1050).

Total of 930 SCREW-WORM cases reported in southwest U.S. October 27 to November 2.
(p. 1050). HORN FLY peaked on cattle in Palm Beach County, Florida.
(p. 1051).

Detection

New State records include a FALSE SPIDER MITE in Oregon (p. 1049) and 2
APHIDS in Utah (pp. 1050, 1051).

For new county, parish, and island records see page 1053.

Special Report

Survey Methods. Selected References 1955. Part XIII. (pp. 1054-1058).

Reports in this issue are for week ending November 1 unless otherwise indicated.

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WEATHER BUREAU'S 30-DAY OUTLOOK

NOVEMBER 1968

The Weather Bureau's 30-day outlook is for temperatures to average below seasonal normals over the southeastern third of the Nation with greatest departures in the South Atlantic and East Gulf States. Predominantly above normal temperatures are expected over the western half of the Country. In unspecified areas near normal averages are indicated. Precipitation will exceed normal along the west coast, the west and central gulf coast, and over much of the Northeast. Subnormal rainfall is expected over the Rockies, the central Plains, and the upper Mississippi Valley. Near normal totals are in prospect elsewhere.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$5.00 a year.

WEATHER OF THE WEEK ENDING NOVEMBER 4

HIGHLIGHTS: Cooler weather came to the West during the week while a warming trend occurred in the East. Most of the precipitation fell after midweek.

PRECIPITATION: A few large areas received no rain or only light sprinkles during the week. These include the Southwestern Deserts, the Rio Grande Valley, much of the northern and central Great Plains, and much of Florida, Georgia, and South Carolina. A few light snow flurries occurred early in the week from northern Minnesota and Michigan to the Appalachians and southern New England. Marquette, Michigan, measured 4 inches on the ground Tuesday morning. A Pacific storm pounded the western coast in the first half of the week. Wind gusts approached 100 m.p.h. at Cape Blanco, Oregon, on Tuesday. Rainfall totals reached 2 to 4 inches or more along the Washington and Oregon coast and almost an inch along the California coast. Showers and thunderstorms developed about midweek over the southern Rockies and central Great Plains. Amounts were of little importance in the Rockies but portions of the Plains recorded 1 to 2-inch totals with isolated spots receiving much more. Lead Hill, Arkansas, received 6.50 inches during the week. Texas, Mississippi, and Alabama reported tornadoes which injured a few persons but property damage was mostly light. Weather of the week continued on page 1048.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

GREENBUG (*Schizaphis graminum* (In broad sense))* - SOUTH DAKOTA - Continues to thrive under warm fall weather in western area. Treated 900 acres of winter wheat near Quinn, Pennington County; further acreage expected to be treated. (Jones, Parsons). NEBRASKA - Remains noneconomic on winter wheat in State. Ranged 5-32 (average 21) per linear foot of drill row in 5 fields checked in Kearney and Franklin Counties. Predators averaged about 2-3 per row foot and appeared to be increasing. (Keith, Oct. 25). KANSAS - Negative in wheat checked in Chautauqua, Montgomery, Cherokee, Labette, Ottawa, Cloud, Mitchell, Osborne, Rooks, and Ellis Counties. Ranged 35-85 per row foot in wheat in Doniphan and Atchison Counties; damage light. (Redding, Simpson). MISSOURI - Very light in all forage sorghum fields checked in northwest area; small colonies on 1-8 percent of plants. Light, 0-10 per row foot, in early seeded wheat. Absent in later-planted fields. (Munson). OKLAHOMA - Ranged 8-40 per linear foot in wheat in Woodward County. Heavy damage reported in spots in fields in Ellis County; ranged 5-15 per linear foot in remainder of fields. Ranged 0-50 per linear foot in Crescent area, Logan County; averaged 4 per linear foot in Garfield County. Very light in Texas County. Averaged 10 per sweep in Mayes and Wagoner Counties. (Okla. Coop. Sur.). ARKANSAS - First specimens of fall season collected on oats in Washington County. Very light, 8-10 per 100 sweeps. (Boyer). TEXAS - Light in young wheatfield near Sabinal, Uvalde County. Infestation evidently just begun since some alates noted and no heavy infestations found. (Tapscott). NEVADA - Very light on fall-planted barley in Lathrop Wells area, Nye County. (Munson, Yamashita).

CORN LEAF APHID (*Rhopalosiphum maidis*) - NEVADA - Heavy on fall-planted barley in Lathrop Wells area, Nye County. (Munson, Yamashita). OKLAHOMA - Counts per linear foot ranged 20-80 in wheat in Ellis County and 0-4 in Major County; ranged 50-100 in volunteer barley in Washita County. (Okla. Coop. Sur.). NEBRASKA - Ranged 8-65 (average 30) per row foot in 5 small grain fields in Kearney and Franklin Counties. (Keith, Oct. 25).

MELONWORM (*Diaphania hyalinata*) - FLORIDA - Larvae 1-14 per leaf on *Cucurbita* sp. at Belle Glade, Palm Beach County, October 18; some defoliation. Collected and determined by W.G. Genung. Larvae still active October 28. (Fla. Coop. Sur.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - NEW MEXICO - Infested only one alfalfa field in Albuquerque area, Bernalillo County; averaged 4-9 per 10 trifoliate leaves. Occasional aphid in alfalfa in Belen area, Valencia County. (Heninger). ARKANSAS - Similar to last week on alfalfa; 500-1,000 per 100 sweeps in Washington County. (Boyer). WISCONSIN - Eggs in 90 percent of specimens examined in western Dane County. (Wis. Ins. Sur.).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - SOUTH CAROLINA - Percent stalk infestations in corn ranged up to 10 (light) in 24 fields, 11-25 (medium) in 33 fields, and 26-100 (heavy) in 22 of 93 fields surveyed in 19 counties throughout State. Populations increased in all counties surveyed compared with 1966. Infestations heavy in Pickens, Spartanburg, Marlboro, Dillon, Marion, Florence, Sumter, Lexington, and Edgefield Counties; damage economic (light) in Dillon, Marion, and Lexington Counties. New county records include Bamberg, Barnwell, Berkeley, Charleston, Chester, Colleton, Dorchester, and Georgetown Counties. Infested 28 of 40 fields in these 8 counties. All counties except Beaufort now infested in State. (Thomas, Oct. 30). ALABAMA - Overwintering larvae light and scattered in old corn examined in De Kalb, Etowah, Blount, and St. Clair Counties. Larvae heavy in stalks in small late fields; 2-10 per stalk in field in northern St. Clair County. (Estes et al.). SOUTH DAKOTA - Fall abundance survey indicated

* According to recent taxonomic studies by L.M. Russell. This aphid on sorghum appears to be this species.

continued decline in populations on corn compared with 1966 and 1967 in Clay and Yankton Counties. Larvae per 100 stalks ranged 0-152 (average 42) on 0-76 percent of plants in Clay County and 0-176 (average 67.5) on 0-88 percent of plants in Yankton County. (Jones).

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - KANSAS - Percent stalk infestations in corn by county: Chautauqua, 5-12 in 2 fields; Montgomery, 5-30 in 4 fields; Cherokee, 30-70 in 4 fields; Labette, 15-50 in 4 fields. Infested all fields surveyed. (Redding). OKLAHOMA - Infested 75 percent of cornstalks in Wagoner County; diapause 98 percent complete. Damage to ears 40 percent in Pittsburg and McIntosh Counties. (Okla. Coop. Sur.). ALABAMA - Fall survey on corn completed in State. New county records include De Kalb, Etowah, St. Clair, and Talladega Counties. Total of 38 counties infested since first established in 1962. Movement eastward reflected in infestation of 2 northeastern counties on State line. (Estes et al.).

BLACK CUTWORM (*Agrotis ipsilon*) - WISCONSIN - Adult catches high past 2 weeks in State; problem may develop in corn in some areas in 1969. (Wis. Ins. Sur.).

FALL ARMYWORM (*Spodoptera frugiperda*) - CALIFORNIA - Medium on sorghum at El Centro, Imperial County. (Cal. Coop. Rpt.).

SMALL GRAINS

APPLE GRAIN APHID (*Rhopalosiphum fitchii*) - NEBRASKA - Ranged 5-350 (average 125) per row foot in 5 wheatfields surveyed in Kearney and Franklin Counties. Heaviest in earlier planted fields. No damage noted. (Keith, Oct. 25).

ENGLISH GRAIN APHID (*Macrosiphum avenae*) - MISSISSIPPI - Adults and nymphs 10-15 per 50 sweeps on winter wheat in Attala County. (Dinkins, Oct. 25). ARKANSAS - Very light, 10-15 per 100 sweeps, in small grain in northwest area. (Boyer).

APHIDS - ARIZONA - Averaged 300 per 100 sweeps on 80 acres of barley at Kansas Settlement, Cochise County. (Ariz. Coop. Sur.). OKLAHOMA - *Rhopalosiphum padi* ranged 0-30 per linear foot in wheat in Garfield and Woodward Counties. (Okla. Coop. Sur.). SOUTH DAKOTA - *R. padi* heavy on roots of 900 acres of winter wheat near Quinn, Pennington County; about 30 per root system in more heavily infested areas of field. (Jones, Parsons).

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - ALABAMA - Larval damage in much small grain following peanuts in Geneva County. (Reynolds).

CORN ROOTWORMS (*Diabrotica* spp.) - ARIZONA - Averaged 7 per 100 sweeps in barley in Cochise County. (Ariz. Coop. Sur.).

WHITE GRUBS (*Phyllophaga* spp.) - OKLAHOMA - Moderate, killing occasional early wheatfield in Kiowa County. (Okla. Coop. Sur.).

WHEAT CURL MITE (*Aceria tulipae*) - KANSAS - Ranged from trace to very heavy in 6 of 19 wheat samples examined from Meade County; negative in other 13 samples. (Somsen).

BROWN WHEAT MITE (*Petrobia latens*) - OKLAHOMA - Ranged 1-15 per linear foot in 7 of 9 wheatfields checked in Major and Woodward Counties. (Okla. Coop. Sur.).

TURF, PASTURES, RANGELAND

A BILLBUG (*Sphenophorus venatus vestitus*) - CALIFORNIA - Heavy in Bermuda grass lawns on college grounds at Pasadena, Los Angeles County. This is a new county record. Adults light in turf at Chino and Ontario, San Bernardino County. Additional survey continues. (Cal. Coop. Rpt.).

GRANULATE CUTWORM (*Feltia subterranea*) - CALIFORNIA - Medium on dichondra lawns at Chico, Butte County. Cutworm damage unusually heavy this fall. (Cal. Coop. Rpt.).

FORAGE LEGUMES

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - SOUTH CAROLINA - Damage heavy on 15 acres of cowpeas in Cherokee County; infested 25 percent of stems. Most serious damage ever on cowpeas. (Nettles, Oct. 30).

ALFALFA WEEVIL (*Hypera postica*) - MISSOURI - Adults averaged 1-2 per 10 sweeps in 2 alfalfa fields in Howell County; no egg laying yet. (Huggans). ARKANSAS - Survey negative on alfalfa in Washington County. (Boyer).

ASIATIC OAK WEEVIL (*Cyrtopistomus castaneus*) - MISSOURI - Adults averaged 1 per 10 sweeps in alfalfa field in Lawrence County. (Huggans).

CLOVER ROOT CURCULIO (*Sitona hispidulus*) - MISSOURI - Adults averaged 10 per 10 sweeps in alfalfa field in Lawrence County. (Huggans).

SPOTTED CUCUMBER BEETLE (*Diabrotica undecimpunctata howardi*) - MISSISSIPPI - Activity light to moderate on alfalfa in Oktibbeha County; adults 12 per 100 sweeps. (Dinkins, Oct. 25).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Averaged 75 per 100 sweeps in alfalfa at Sunizona, Cochise County. (Ariz. Coop. Sur.).

PEA APHID (*Acyrtosiphon pisum*) - ARKANSAS - Remains light on forage legumes in northwest area; less than 50 per 100 sweeps. (Boyer). NEW MEXICO - Light in alfalfa in Bernalillo, Valencia, and San Juan Counties. (Heninger).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Average per 100 sweeps in alfalfa by county: Pinal, adults 100 and nymphs 150; Cochise, nymphs and adults 625 at Sunizona. (Ariz. Coop. Sur.).

COTTON

BOLL WEEVIL (*Anthonomus grandis*) - MISSISSIPPI - Much activity in some very late cotton in Oktibbeha County; feeding activity continues. (Dinkins, Oct. 25). TEXAS - Light northwest of Florey, Andrews County. Collected by O. Lindig October 15, 1968. Determined by R.E. Warner. This is a new county record. (PPC).

BOLLWORMS (*Heliothis* spp.) - MISSISSIPPI - Much *H. zea* and *H. virescens* activity on late-planted cotton in Oktibbeha County; some feeding on squares and young bolls. (Dinkins, Oct. 25).

COTTON LEAF PERFORATOR (*Bucculatrix thurberiella*) - ARIZONA - Adults numerous at lights in Tucson, Pima County, during October. Determined by F.G. Werner. (Ariz. Coop. Sur.).

SUGARBEETS

BEET ARMYWORM (*Spodoptera exigua*) - CALIFORNIA - Larvae medium to heavy at Calipatria and Heber, Imperial County. (Cal. Coop. Rpt.). ARIZONA - Eggs 3 and larvae 2 per plant in Pinal County. (Ariz. Coop. Sur.).

POTATOES, TOMATOES, PEPPERS

A LEAF MINER FLY (*Liriomyza munda*) - CALIFORNIA - Larvae and pupae heavy in tomato plantings at Waterford, Stanislaus County. Not as prevalent as past years. (Cal. Coop. Rpt.).

TOBACCO FLIA BEETLE (*Epitrix hirtipennis*) - CALIFORNIA - Medium on tomato plantings at Cucamonga, San Bernardino County. (Cal. Coop. Rpt.).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - ALABAMA - Infestations varied in pimento peppers in De Kalb and other Sand Mountain counties. Larvae in 10-15 percent of peppers in 5-acre field in De Kalb County; negligible in 2 other fields. (Estes et al.).

POTATO TUBERWORM (*Phthorimaea operculella*) - VIRGINIA - Severe on potato tubers in garden in Westmoreland County. (Ptucha, Allen).

COLE CROPS

CABBAGE LOOPER (*Trichoplusia ni*) - VIRGINIA - Large larvae caused loss of entire kale crop on prison farm in Goochland County. Infestations local and severe. (Truett, Amos, Oct. 22).

GENERAL VEGETABLES

CABBAGE LOOPER (*Trichoplusia ni*) - ARIZONA - Eggs 4 and larvae 3 per lettuce plant at Casa Grande, Pinal County. (Ariz. Coop. Sur.).

NOCTUID MOTHS - MICHIGAN - Collected 13 *Anticarsa gemmatalis* (velvetbean caterpillar), 29 *Trichoplusia ni* (cabbage looper), 46 *Heliothis zea* (corn earworm), 14 *Plathypena scabra* (green cloverworm), 5 *Amathes c-nigrum* (spotted cutworm), 36 *Peridroma saucia* (variegated cutworm), 46 *Agrotis ipsilon* (black cutworm), and 49 *Pseudaletia unipuncta* (armyworm) October 17-23 at Lenawee County blacklight station. (Janes).

Weather of the week continued from page 1044.

TEMPERATURE: The week began with warm temperatures over the western half of the Nation while cool weather prevailed in the East. It was especially warm along the eastern slope of the Rockies with numerous stations from western South Dakota to the Rio Grande registering afternoon temperatures in the middle and upper 80's on October 30. With clear skies, bright sunshine, and brisk southerly winds, numerous stations in the central Great Plains established new high-temperature records on Wednesday. In sharp contrast, cold air brought the first hard freeze of the season to the East. Subfreezing minimum temperatures occurred in the Deep South on Monday morning, October 28, and in the Northeast from Tuesday to Thursday. In the second half of the week, the temperature situation was reversed. Cool weather invaded the West and the East warmed. On Wednesday afternoon, North Platte, Nebraska, was 15° warmer than Tampa, Florida, on Saturday afternoon North Platte was 30° colder than Tampa, the maximum at North Platte having dropped from 86° to 48°. Most of the Nation averaged warmer than normal. Some western sections of the northern and central Great Plains averaged 6° to 9° above normal. (Summary supplied by Environmental Data Service, ESSA.)

DECIDUOUS FRUITS AND NUTS

APPLE GRAIN APHID (*Rhopalosiphum fitchii*) - WASHINGTON - Laying eggs on 160 acres of apples October 12 at Selah, Yakima County. (Gregorich, Retan). WISCONSIN - Much egg laying on *Prunus* spp. in western Dane County. (Wis. Ins. Sur.). INDIANA - Alates and nymphs common at Vincennes; no overwintering eggs found October 22-28. (Dolphin).

WOOLLY APPLE APHID (*Eriosoma lanigerum*) - NEW MEXICO - Very light to heavy in apple orchards in Farmington and Aztec area, San Juan County; especially heavy on water sprouts. (Heninger).

SAN JOSE SCALE (*Aspidiotus perniciosus*) - CALIFORNIA - Heavy on cherry trees at Turlock, Stanislaus County. (Cal. Coop. Rpt.).

CODLING MOTH (*Carpocapsa pomonella*) - INDIANA - Feeding larvae in dropped apples common in unsprayed orchards at Vincennes October 22-28; ranged from second instars to prepupae. (Dolphin).

GREEN FRUITWORM (*Lithophane antennata*) - MICHIGAN - Adults appearing at Lenawee County blacklight station. (Janes, Oct. 29).

LESSER PEACH TREE BORER (*Synanthedon pictipes*) - INDIANA - No males caught in virgin female traps at Vincennes October 22-28. (Dolphin).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - INDIANA - Only 1 male caught in virgin female traps at Vincennes orchard October 22-28. (Dolphin).

APPLE MAGGOT (*Rhagoletis pomonella*) - INDIANA - Only 1 adult captured on sticky-boards at Vincennes October 22-28. (Dolphin).

PECAN WEEVIL (*Curculio caryae*) - OKLAHOMA - Continues heavy on Mayes County pecans. (Okla. Coop. Sur.).

A SPIDER MITE (*Tetranychus mcdanieli*) - NEW MEXICO - Light to heavy, damaging apple foliage in orchards in Farmington and Aztec area, San Juan County; massed on trunks and branches. (Heninger).

CITRUS

PURPLE SCALE (*Lepidosaphes beckii*) - CALIFORNIA - Medium on lemon trees at National City, San Diego County. (Cal. Coop. Rpt.).

A CERAMBYCID BEETLE (*Dendrobias mandibularis*) - TEXAS - Light, feeding on grapefruit near Weslaco, Hidalgo County. (Deer).

WESTERN FLOWER THRIPS (*Frankliniella occidentalis*) - ARIZONA - Light in new fall growth in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

ORNAMENTALS

FULLER ROSE WEEVIL (*Pantomorus cervinus*) - CALIFORNIA - Heavy numbers damaging roses, gardenias, and other ornamentals in many northern areas. Adults unusually abundant and damaging this season. (Cal. Coop. Rpt.).

A FALSE SPIDER MITE (*Pentamerismus taxi*) - OREGON - Infested Irish yew at Portland, Multnomah County. Determined by J.L. Mellott. This is a new State record. (Every).

A FALSE SPIDER MITE (*Tenuipalpus dasples*) - FLORIDA - Adults infested all 12 *Cocos australis* plants inspected at De Land, Volusia County, September 26. (Roberts). This is a new Florida Department of Plant Industry host record. (Fla. Coop. Sur.).

FOREST AND SHADE TREES

SOUTHERN PINE BEETLE (*Dendroctonus frontalis*) - NORTH CAROLINA - Continues most significant problem on pine in State; damage reported for first time this season in Cabarrus, Mecklenburg, and Wilson Counties. Controls continuing in outbreak areas. Activity increased in previously infested counties, especially in Davie and Rowan Counties. Epidemic, 200+ spots detected, in Cleveland County. Also active in Guilford, Iredell, Granville, and Yadkin Counties. Detected 25 spots during recent survey of Rutherford County. (For. Pest Newsltr., Oct. 10).

BLACK TURPENTINE BEETLE (*Dendroctonus terebrans*) - NORTH CAROLINA - Damage significant on pine throughout Cleveland, Davidson, Davie, Gates, and Rowan Counties; associated with *D. frontalis* (southern pine beetle). Active in Cabarrus, Stanly, Guilford, Pender, and Brunswick Counties. (For. Pest Newsltr., Oct. 10).

ENGRAVER BEETLES (*Ips. spp.*) - NORTH CAROLINA - Active on pine throughout State. Problem most serious in counties under attack by *Dendroctonus frontalis* (southern pine beetle). (For. Pest Newsltr., Oct. 10).

PINE NEEDLE SCALE (*Phenacaspis pinifoliae*) - IOWA - Present on spruce at Farnhamville, Calhoun County; Ames, Story County; New Hampton, Chickasaw County. (Gunderson).

AN APHID (*Chaitophorus abditus*) - UTAH - Found by G.F. Knowlton on willow bark at Washington, Washington County, June 8, 1968, for new State record. Determined by D. Hille Ris Lambers. (Knowlton).

MAN AND ANIMALS

SCREW-WORM (*Cochliomyia hominivorax*) - Total of 930 cases reported in U.S. October 27 - November 2 as follows: TEXAS - Aransas 1, Archer 1, Atascosa 29, Bandera 8, Bastrop 2, Bee 3, Bell 1, Bexar 11, Blanco 1, Brewster 5, Brooks 12, Brown 3, Burnet 10, Callahan 1, Coke 2, Coleman 7, Colorado 1, Comal 1, Comanche 1, Concho 10, Crockett 9, Culberson 1, De Witt 9, Dimmit 50, Duval 18, Edwards 8, Fisher 1, Frio 47, Gillespie 1, Glasscock 2, Goliad 7, Gonzales 1, Guadalupe 4, Haskell 1, Hays 2, Hidalgo 26, Howard 1, Hudspeth 2, Jack 1, Jeff Davis 7, Jim Hogg 7, Jim Wells 16, Karnes 15, Kendall 2, Kenedy 14, Kerr 3, Kimble 4, Kinney 40, Kleberg 1, Lampasas 1, La Salle 18, Live Oak 6, Llano 17, McCulloch 15, Mason 2, Maverick 18, Medina 42, Menard 11, Milam 2, McMullen 5, Pecos 11, Presidio 7, Reagan 1, Real 8, Reeves 2, Refugio 4, Runnels 8, San Patricio 7, San Saba 22, Schleicher 2, Starr 28, Stephens 1, Sterling 2, Stonewall 1, Taylor 1, Terrell 18, Tom Green 14, Upton 2, Uvalde 63, Val Verde 34, Victoria 1, Webb 27, Willacy 9, Williamson 2, Wilson 19, Zapata 14, Zavala 46; ARIZONA - Graham 1, Maricopa 6, Mohave 2, Pima 2, Pinal 9, Yavapai 1, Yuma 1; CALIFORNIA - Imperial 2, San Diego 3, San Luis Obispo 1; NEW MEXICO - Luna 1. Total of 820 cases reported in portion of Barrier Zone in Republic of Mexico October 28 to November 2 as follows: Territorio sur de Baja California 100, Sonora 155, Chihuahua 179, Coahuila 235, Nuevo Leon 83, Tamaulipas 68. Total of 61 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 80,544,000; New Mexico 1,720,000; Arizona 11,520,000; California 1,300,000; Mexico 93,944,000. (Anim. Health Div.).

HORN FLY (*Haematobia irritans*) - FLORIDA - Peaked for year October 28 at Belle Glade area, Palm Beach County. Average per head: 700 on steers and cows and 1,700 (ranged 1,200-2,000) on bulls. Definite reduction expected by mid-November. Determined by M.J. Janes. (Janes). MISSISSIPPI - Adults 30-40 per head on 10 Oktibbeha County cattle. (Dinkins, Oct. 25).

COMMON CATTLE GRUB (*Hypoderma lineatum*) - FLORIDA - Larvae 1-7 per animal in 4 out of 26 animals inspected at Belle Glade, Palm Beach County; typical for October. Collected and determined by M.J. Janes. (Janes, Oct. 18).

SHORT-NOSED CATTLE LOUSE (*Haematopinus eurysternus*) - OKLAHOMA - Averaged 1 per 2 hair parts on cattle checked in Payne County. (Okla. Coop. Sur.).

HOUSEHOLDS AND STRUCTURES

A JAPANESE WEEVIL (*Calomycterus setarius*) - VIRGINIA - Collected in houses at Broad Run, Fauquier County, July 7 by P. McFarland and at Steeles Tavern, Augusta County, July 9 by A.M. Woodside. Determined by R.E. Warner. (Allen). These are new county records. (PPC).

MISCELLANEOUS WILD PLANTS

AN APHID (*Bipersona ochrocentri*) - UTAH - Found by G.F. Knowlton on thistle at Cove Fort, Millard County, June 7, 1968. Determined by D. Hille Ris Lambers. This is a new State record. (Knowlton).

STORED PRODUCTS

INDIAN-MEAL MOTH (*Plodia interpunctella*) - IOWA - Larvae continue problem in stored grain statewide this year. Temperatures favored this pest this fall. (Iowa Ins. Sur.). NEW MEXICO - Heavy in peanut meal in storage building at Portales, Roosevelt County. (Mathews, Elson).

RUSTY GRAIN BEETLE (*Cryptolestes ferrugineus*) - OREGON - Heavy in rain-damaged wheat at Hillsboro, Washington County. (Every et al.).

A HAIRY FUNGUS BEETLE (*Typhaea stercorea*) - OREGON - Numerous in barley in Washington County. (Every et al.).

CONFUSED FLOUR BEETLE (*Tribolium confusum*) - NEW MEXICO - This species, *Trogoderma* spp., and carpet beetles light to moderate in sacked and bulk feed and stored grain in Roosevelt County. (Mathews, Elson).

BENEFICIAL INSECTS

CONVERGENT LADY BEETLE (*Hippodamia convergens*) - ARKANSAS - Low numbers continue active in legumes and small grain in northwest area. Adults ranged 8-10 per 100 sweeps. (Boyer). TEXAS - Generally light, decreased greatly during October. (Texas Coop. Rpt.).

GREEN LACEWINGS (*Chrysopa* spp.) - ARKANSAS - Low numbers continue active in legumes and small grain in northwest area. Adults and larvae ranged 15-20 per 100 sweeps. (Boyer).

HYMENOPTEROUS PARASITES - ARKANSAS - Ranged 200-300 per 100 sweeps in legumes and small grains in northwest area. Aphids not expected to build up. (Boyer).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - ALABAMA - Light in creek bank at Rogersville, Lauderdale County. Collected by T.I. Pigott October 28, 1968. Determined by D.R. Smith. This is a new county record. (PPC).

PINK BOLLWORM (Pectinophora gossypiella) - ARIZONA - Infested 90 percent of unpicked cotton to some degree in Graham County. (Ariz. Coop. Sur.). NEVADA - Collected 31 males October 28 in sex lure traps in Moapa Valley, Clark County. (Munson, Yamashita). First larvae of season in gin trash collected October 24 in Pahrump Valley, Nye County. (Burnett, Munson).

A WHITE-FRINGED BEETLE (Graphognathus peregrinus) - LOUISIANA - Heavy at Pineville, Rapides Parish. Collected by L.L. Sandoz and R.W. Logsdon October 23, 1968. Determined by R.E. Warner. This is a new parish record. (PPC).

HAWAII INSECT REPORT

Turf, Pasture, Rangeland - A GRASS WEBWORM (Herpetogramma licarsisalis) found for first time on island of Lanai. Adults heavy on tall grasses along road shoulders and in open areas in and around Lanai City. Larvae 2 to 3 per square foot on turf grasses in golf course and some residential premises. (Miyahira).

Vegetables - LEAF MINER FLIES (Liriomyza spp.) badly damaged approximately 75 percent of tomato foliage in field at Kapaa, Kauai. Generally light on snap beans, medium in some fields at Waianae and Waimanalo, Oahu. (Ikehara, Yamamoto). TUMID SPIDER MITE (Tetranychus tumidus) heavy in sweetpotato field at Waiahole, Oahu; damaged foliage very conspicuous. (Kumabe). GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) remains heavy and troublesome on snap beans and eggplants in farms at Waianae, Oahu. (Yamamoto). BEAN FLY (Melanagromyza phaseoli) reported for first time on Lanai Island. Larval damage and adult numbers heavy on lima, long, and lablab beans in gardens at Lanai City. Adults and larvae heavy on lima and long beans in gardens at Hoolehua and Maunaloa on Molokai. Slightly damaged some snap bean fields, especially where spray operations neglected or hampered at Waianae, Oahu. (Nakao et al.). Adults of a PLATASPID BUG (Coptosoma xanthogramma) light on lima beans in community garden at Lanai City, Lanai, for a new island record. (Nakao).

Fruits - Nymphs and adults of a COCKROACH (Diploptera dytiscoides) heavy; damage light on ripe pineapples and moderate on bark of Norfolk Island pine and foliage of orange tree at Haiku, Maui. (Doi).

Ornamentals - ORCHID WEEVIL (Orchidophilus aterrimus) larvae heavily damaged stems and foliage of dendrobium orchids at Hilo, Hawaii Island; adults numerous. (Yoshioka). A FALSE SPIDER MITE (Brevipalpus phoenicis) heavy on undersides of anthurium leaves in greenhouse at Lihue, Kauai; damaged foliage very noticeable. (Ikehara).

Beneficial Insects - Larvae of a CECIDOMYIID MIDGE (Zeuxidiplosis giardi) heavily infesting few scattered Klamath-weed plants about one mile below release point on Mt. Hualalai, Hawaii Island. No Klamath-weed detected at original release point. (Yoshioka).

INSECT DETECTION

New State Records

A FALSE SPIDER MITE (Pentamerismus taxi) - OREGON - Infested Irish yew at Portland, Multnomah County. Determined by J.L. Mellott. (p. 1049).

AN APHID (Chaitophorus abditus) - UTAH - On willow at Washington, Washington County. Collected by G.F. Knowlton June 8, 1968. Determined by D. Hille Ris Lambers. (p. 1050).

AN APHID (Bipersona ochrocentri) - UTAH - On thistle at Cove Fort, Millard County. Collected by G.F. Knowlton June 7, 1968. Determined by D. Hille Ris Lambers. (p. 1051).

New County, Parish, and Island Records

APPLE MAGGOT (Rhagoletis pomonella) - MISSOURI - Adults collected from wasp nest on hydrangea twig at St. Louis, St. Louis City County, July 16. Determined by G.C. Steyskal. (PPC).

EUROPEAN CORN BORER (Ostrinia nubilalis) - SOUTH CAROLINA - Bamberg, Barnwell, Berkeley, Charleston, Chester, Colleton, Dorchester, and Georgetown Counties. (p. 1045).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - ALABAMA - De Kalb, Etowah, St. Clair, and Talladega Counties. (p. 1046).

A BILLBUG (Sphenophorus venatus vestitus) - CALIFORNIA - Los Angeles County. (p. 1046).

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Andrews County. (p. 1047).

A JAPANESE WEEVIL (Calomycterus setarius) - VIRGINIA - Augusta and Fauquier Counties. (p. 1051).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - ALABAMA - Lauderdale County. (p. 1052).

A WHITE-FRINGED BEETLE (Graphognathus peregrinus) - LOUISIANA - Rapides Parish. (p. 1052).

A GRASS WEBWORM (Herpetogramma licarsisalis) - HAWAII - Lanai Island. (p. 1052).

BEAN FLY (Melanagromyza phaseoli) - HAWAII - Lanai Island. (p. 1052).

A PLATASPID BUG (Coptosoma xanthogramma) - HAWAII - Lanai Island. (p. 1052).

LIGHT TRAP COLLECTIONS

FLORIDA - Gainesville - 10/28-31, BL - Armyworm (Pseudaletia unipuncta) 3, beet armyworm (Spodoptera exigua) 1, black cutworm (Agrotis ipsilon) 7, corn earworm (Heliothis zea) 1, granulate cutworm (Feltia subterranea) 2. MISSISSIPPI - Stoneville - 10/26-11/1, 2BL, 37-84°F, no precip. - Armyworm 68, beet armyworm 396, black cutworm 54, corn earworm 49, fall armyworm (Spodoptera frugiperda) 29, granulate cutworm 40, variegated cutworm (Peridroma saucia) 1, yellow-striped armyworm (Prodenia ornithogalli) 7. MISSOURI - Fair Grove - 10/24-30 - Armyworm 28, black cutworm 18, corn earworm 62, fall armyworm 2, variegated cutworm 3. TEXAS - Waco - 10/26-11/1, BL - Armyworm 13, beet armyworm 117, black cutworm 6, cabbage looper 4, corn earworm 10, fall armyworm 2, granulate cutworm 54, variegated cutworm 28, yellow-striped armyworm 1.

SURVEY METHODS

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Part XIII

Additional copies of Parts I through XIII of this bibliography are available from Survey and Detection Operations.

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

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Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG economic on small grain in areas of South Dakota, damage to wheat reported in western Nebraska. (p. 1061).

SPOTTED ALFALFA APHID continues to increase on alfalfa in Salt River Valley, Arizona. (p. 1061).

CORN EARWORM infestation in corn higher than in 1967 in Indiana, with major increase in southern half of State. (p. 1061).

EUROPEAN CORN BORER heavier in northern Arkansas and in northeast and east-central Kansas than in 1967; population above 14-year average in Cuming County, Nebraska. (pp. 1061-1062).

PEAR PSYLLA infestation heaviest in recent years in Eugene area of Oregon. (p. 1064).

DOUGLAS-FIR BEETLE epidemic in Klamath National Forest, California, decreasing as predicted. A MARGARODID SCALE increasing range in same forest; potential increasing. (p. 1066).

Total of 758 SCREW-WORM cases reported in southwest U.S. November 3-9. (p. 1066).

Detection

For new county and island records see page 1068.

Special Report

Distribution of Southwestern Corn Borer (map). (p. 1070).

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WEATHER OF THE WEEK ENDING NOVEMBER 12

HIGHLIGHTS: Snow or chilling rain accompanied the cold, cloudy weather over most of the Nation. The east coast was battered by high winds which, at a few locations, reached hurricane force.

PRECIPITATION: A snow storm swept across the northern Rocky Mountains early in the week. By midweek snow had fallen from the Rockies to the Great Lakes and by Thursday had spread to New York and New England. A second storm hit New England on Sunday and a third storm on Tuesday, November 12. The last storm, most severe of the three, was accompanied by winds gusting to 70-80 m.p.h. off the southeast coast causing heavy damage to utility lines, coastal installations and shipping. A strong cold front set off scattered showers with snow in some localities in eastern New Mexico from Wednesday to Friday. As the front crossed Texas, it produced wet snow over the northern half of the State and cold rain over the southern half. Most of the snow melted as it fell. Light rains fell in the Southeast early in the week. The weekend brought heavier rains to that area. Some previously dry sections in southern Georgia benefited from an inch or more of rain. The moderate to heavy rains in Florida on Saturday and Monday were accompanied by blustery winds. The Pacific Northwest received rain early and late in the week with totals ranging from 2 to 6 inches along the coast. Snow fell in the higher elevations in the Northwest. Arizona, southern Nevada, and the California deserts received no precipitation.

Weather of the week continued on page 1064.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

BEEF LEAFHOPPER (*Circulifer tenellus*) - UTAH - Curly top disease light to moderate in canning crop tomato fields from Utah County through Box Elder County. (Duncan, Knowlton, Nov. 1). Populations higher in south-central and southern areas this season. (Knowlton, Nov. 1). CALIFORNIA - Fall spraying terminated October 19; aerially sprayed 47,416 acres. (Cal. Coop. Rpt.).

CORN EARWORM (*Heliothis zea*) - INDIANA - Infestations 1.06 percent above the 1967 figure of 3.50 percent, with major increase in southern half of State. (Huber, Nov. 1). UTAH - Usually caused only tip injury to canning corn from Utah County through Cache County. (Duncan, Knowlton, Nov. 1).

CORN LEAF APHID (*Rhopalosiphum maidis*) - OKLAHOMA - Ranged 10-40 per whorl on late-planted sorghum in Texas County. (Okla. Coop. Sur.). NEW MEXICO - Averaged 0-6 per linear foot in wheat near Roswell, Chaves County. (Mathews). UTAH - Generally light in canning corn where a carbamate insecticide not applied but very numerous where dusted with this insecticide in northern and central areas. (Duncan, Knowlton, Nov. 1).

GREENBUG (*Schizaphis graminum* (In broad sense))* - SOUTH DAKOTA - Infestation economic and damage severe to small grains in Haakon, Jackson, Pennington, Butte, Jones, Stanley, and Lyman Counties. Reported earlier in Aurora County. (Kantack, Jones). NEBRASKA - Damaging wheat in Scotts Bluff County. Ranged 350-500 per row foot in several fields; few fields destroyed. Damage heaviest where wheat under moisture stress, particularly in higher spots. (Hagen, Nov. 5). KANSAS - Occasionally found on wheat in Riley, Pottawatomie, Jackson, and Shawnee Counties; averaged less than 1 per foot. (Simpson). OKLAHOMA - Ranged 50-100 per row foot on wheat at Cowden area, Washita County. Very light on regrowth sorghum in Payne County. (Okla. Coop. Sur.). TEXAS - Light on wheat near Sabinal, Uvalde County; light on small grains west of Uvalde; negative in other checks of same area. (Tapscott). NEW MEXICO - Averaged 4-10 per linear foot in wheat near Roswell, Chaves County. (Mathews).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - ARIZONA - Buildup continues in many west side alfalfa fields in Salt River Valley, Maricopa County. Fields heavily infested generally bronzed across top; appears like frost damage. Counts range 200-2,500 per 10 sweeps. Low counts predominantly adults. (Ariz. Coop. Sur.).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - IOWA - High fall population making harvest in south-central district (VIII) very difficult due to stalk breakage and clogging heads of harvesting equipment. (Iowa Ins. Sur.). NEBRASKA - In 30 Cumming County fields, borers averaged 183.3 per 100 stalks; infestation averaged 81.6 percent. Borers averaged 27,306 per acre October 11. (Hill, Keith, Park). Stalk infestation averaged 69.2 percent in 30 Hall County fields; borers averaged 97.8 per 100 stalks and 18,648 per acre October 25. (Hill, Short, Park). Populations above 14-year average in Cumming County, below in Hall County. (Keith). KANSAS - Fall survey indicated population somewhat higher in northeast and east-central districts in 1968 than in 1967 but not as high as in 1966. Counts in north-central and central districts in 1968 about same as in 1967. (Simpson). MISSOURI - Averaged 112.8 per 100 cornstalks and infested average of 54.56 percent of plants in survey of southwest area. (Hanning et al.). ARKANSAS - Limited survey on corn for this species and *Diatraea grandiosella* (southwestern corn borer) in 3 northern districts. *O. nubilalis* infested 11.6-29.3 (State average 25.0) percent of stalks; larvae ranged 5.8-37.0 (State average 26.3) per 100 plants. *D. grandiosella* lodged 1.8-8.0 (State average 5.5) percent

* According to recent taxonomic studies by L.M. Russell. This aphid on sorghum appears to be this species.

of stalks. Both species heavier in northeast district where more corn acreage concentrated. *O. nubilalis* heavier in 1968 than in 1967 but lighter than in 1966. Infestations of *D. grandiosella* similar for 1966-1968; lodged up to 30-40 percent of stalks in some late fields; lodging in early corn heavier than usual this year. (Boyer). This replaces note under European corn borer in Arkansas in CEIR 18(44): 1032. (PPC).

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - MISSOURI - Percent girdled cornstalks by county: Newton 17.8, Christian and Jasper 11.6, Lawrence 9.0, and Greene 5.2. (Hanning et al.). ALABAMA - Larvae light, hibernating in old corn stubble of several fields in Pickens County. (Pigott).

SMALL GRAINS

LISSEY CORNSTALK BORER (*Elasmopalpus lignosellus*) - ALABAMA - Much damage to stands of rye and other small grains, along with adverse dry weather, reported in southeast area. Damage in Barbour, Geneva, Henry, and Houston Counties. (Walton et al.).

ENGLISH GRAIN APHID (*Macrosiphum avenae*) - MISSISSIPPI - Light, about 30 adults and nymphs in 50 sweeps, on winter wheat in Clay County. (Dinkins).

APPLE GRAIN APHID (*Rhopalosiphum fitchii*) - KANSAS - Light, 0-5 per foot of row, in post wheat examined in Riley, Pottawatomie, Jackson, and Shawnee Counties. (Simpson).

TURF, PASTURES, RANGELAND

A BILLBUG (*Sphenophorus venatus vestitus*) - CALIFORNIA - Found in 4 new locations in Los Angeles County: On hybrid Bermuda grass and zoysia grass at San Gabriel, on hybrid Bermuda grass at Long Beach, and on Bermuda grass at Monrovia. (Cal. Coop. Rpt.).

LISSEY CORNSTALK BORER (*Elasmopalpus lignosellus*) - DELAWARE - Young larvae infesting ryegrass cover crop in area of Sussex County. Collected by E. Ralph. Infestation sporadic throughout field. (Boys).

A WHITE GRUB (*Cyclocephala* sp.) - VIRGINIA - Damaging turf in Fauquier, Carroll, and Loudoun Counties. (Allen).

FORAGE LEGUMES

PIA APHID (*Acyrtosiphon pisum*) - MISSISSIPPI - Moderate on Oktibbeha County alfalfa; adults and nymphs 15-20 per square foot. (Dinkins). ARIZONA - Building up in many Salt River Valley alfalfa fields. Averaged 200 per 100 sweeps. (Ariz. Coop. Sur.).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - MISSISSIPPI - Moderate, 30 adults in 50 sweeps on Oktibbeha County alfalfa. (Dinkins, Nov. 4). ARIZONA - Decreased; averaged 50 per 100 sweeps of alfalfa in Goodyear and Litchfield areas of Maricopa County. (Ariz. Coop. Sur.). CALIFORNIA - Nymphs and adults heavy on *Lotus bertholeti* in nursery at Millbrae, San Mateo County. (Cal. Coop. Rpt.).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Decreased in most alfalfa in Maricopa County. Averaged 40 per 100 sweeps on west side of Salt River Valley. Few nymphs found; about full grown. (Ariz. Coop. Sur.).

ALFALFA WEEVIL (*Hypera postica*) - MISSISSIPPI - Adults 3 per 10 square feet on Pontotoc County alfalfa. Eggs in several females. (Pitre).

EGYPTIAN ALFALFA WEEVIL (Hypera brunneipennis) - ARIZONA - Larvae averaged 3 per plant in 15-acre field at Goodyear, Maricopa County. (Ariz. Coop. Sur.).

PEA WEEVIL (Bruchus pisorum) - CALIFORNIA - Heavy in vetch seed at Stoneyford, Glenn County. (Cal. Coop. Rpt.).

ALFALFA CATERPILLAR (Colias eurytheme) - ARIZONA - Adults still flying in few large fields of alfalfa in Perryville area, Maricopa County. Larvae averaged 400 per 100 sweeps in 60-acre field. (Ariz. Coop. Sur.).

A LEAF MINER FLY (Liriomyza trifolii) - ARIZONA - Adults averaged 10 per 100 sweeps of alfalfa in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

SUGARBEETS

BET ARMYWORM (Spodoptera exigua) - ARIZONA - This species and Trichoplusia ni (cabbage looper) light to moderate on advanced or nearly mature beet fields in Maricopa County. Healthy, well-managed fields tolerating larval feeding. Heavily infested crowns in two 40-acre fields near Maryvale, Maricopa County. Plants about 5 inches high and in 6-leaf stage. (Ariz. Coop. Sur.).

BEANS AND PEAS

PEA APHID (Acyrtosiphon pisum) - UTAH - Infestations and damage very low in canning peas in northern and central areas. (Duncan, Knowlton, Nov. 1).

MEXICAN BEAN BEETLE (Epilachna varivestis) - UTAH - Moderately damaging in northern and central area bean fields. (Duncan, Knowlton, Nov. 1).

CUCURBITS

WESTERN POTATO LEAFHOPPER (Empoasca abrupta) - CALIFORNIA - Heavy on watermelon vines at Saugus, Los Angeles County. (Cal. Coop. Rpt.).

GENERAL VEGETABLES

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Heavily damaged growing tips and young shoots of onions in Luke Air Force Base area of Maricopa County. (Ariz. Coop. Sur.).

BET ARMYWORM (Spodoptera exigua) - ARIZONA - Heavily damaged growing tips and young shoots of onions in Luke Air Force Base area of Maricopa County. (Ariz. Coop. Sur.).

GREEN PEACH APHID (Myzus persicae) - ARIZONA - Winged adults light on carrots and onions in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

THRIPS - ARIZONA - Frankliniella spp. damaged some lettuce in northwest Phoenix area, Maricopa County; lettuce about mature. Light numbers appearing on young carrot foliage. Thrips tabaci moderate on onions in Luke Air Force Base area, Maricopa County. (Ariz. Coop. Sur.).

DECIDUOUS FRUITS AND NUTS

PEAR PSYLLA (Psylla pyricola) - WASHINGTON - About 90 percent of population overwintering forms in 10 lower and upper Yakima Valley orchards surveyed October 23. Counts very high. (Johnson, Nov. 1). OREGON - Infestation appears heaviest in recent years in Eugene area, Lane County. (Tinker). Infestation near normal in Medford area, Jackson County. Some spraying done. (Berry).

WHITE PEACH SCALE (Pseudaulacaspis pentagona) - FLORIDA - Most individual males in pre-adult stage, none yet adults; 5-7 percent of old female scales living, with 2 percent having few unhatched eggs; 55 percent of immature females in second sedentary stage, none yet adults for this generation on peach trees at Gainesville, Alachua County. Determined by C. Kuitert. (Kuitert, Nov. 5).

SAN JOSE SCALE (Aspidiotus perniciosus) - CALIFORNIA - Heavy on plum bark at Marysville, Yuba County. (Cal. Coop. Rpt.).

PECAN WEEVIL (Curculio caryae) - ALABAMA - Larvae damaged estimated 5-7 percent of pecan nuts in Clarke County; harvest in progress. (Helms).

HICKORY SHUCKWORM (Laspeyresia caryana) - MISSISSIPPI - Active in Oktibbeha County pecan orchards. (Dinkins, Nov. 4).

FILBERT APHID (Myzocallis coryli) - UTAH - Extremely numerous on hazelnut at Logan, Cache County; foliage sticky. Moderate to abundant where observed in Davis and Salt Lake Counties. (Knowlton, Nov. 1).

Weather of the week continued from page 1060.

TEMPERATURE: Temperatures averaged above normal over the Great Basin and along the Pacific coast and below normal over most of the rest of the Nation. A wide belt from the Dakotas to Texas and Louisiana averaged 6° to 9° below normal. A cooling trend prevailed over most of the Nation from the Rocky Mountains to the Atlantic Ocean. Subzero temperatures occurred in Iowa and Wyoming. Fox Park, Wyoming, registered 12° below zero on one morning. Subfreezing temperatures continued in spots in the Dakotas from Tuesday morning to the end of the week. The highest temperature during that period at Devils Lake, North Dakota, and at Lemmon, South Dakota, during that period were 31° and 30°, respectively. Temperatures remained in the 40's over parts of the Deep South on Saturday when Mobile, Alabama, registered 47°. The following morning Jackson, Mississippi, registered 29°. Some warming occurred in the southern Rockies at the end of the week. (Summary supplied by Environmental Data Service, ESSA.)

CITRUS

Citrus Insect Situation in Florida - End of October - CITRUS RUST MITE (Phyllocoptruta oleivora) infested leaves in 73 percent of groves (norm 67 percent); 43 percent economic (norm 49 percent). Infested fruit in 82 percent of groves (norm 73 percent); 58 percent economic (norm 53 percent). Increased to high range on leaves and fruit. Slightly below normal on leaves but well above normal on fruit. Expected to remain near current level through November. Highest districts west, south, and north but all districts high on fruit. TEXAS CITRUS MITE (Eutetranychus banksi) infested 20 percent of groves (norm 23 percent); 5 percent economic (norm 7 percent). Increased but still below normal; in low range. Little change expected. Highest district north. CITRUS RED MITE (Panonychus citri) infested 23 percent of groves (norm 30 percent); 6 percent economic (norm 8 percent). Population advanced and some further increase expected. Still below normal; in low range. Highest district west. GLOVER SCALE (Lepidosaphes gloverii) infested 47 percent of groves (norm 65 percent); 2 percent economic (norm 11 percent). Below normal; will remain at low level through November despite expected increase. Highest district east. YELLOW SCALE (Aonidiella citrina) infested 41 percent of groves (norm 58 percent); less than 1 percent economic (norm 11 percent). Lowest October level since 1962. Slight increase expected. Highest district central. BLACK SCALE (Saissetia oleae) infested 34 percent of groves (norm 32 percent); 9 percent economic (norm 10 percent). Near normal in low range. Slight increase expected until low temperatures occur. Highest districts central and east. PURPLE SCALE (L. beckii), CHAFF SCALE (Parlatoria pergandii), and FLORIDA RED SCALE (Chrysomphalus aonidum) below normal and in very low range. An ARMORED SCALE (Unaspis citri) infested 12 percent of groves; 2 percent economic. Expected to intensify in infested groves. WHITEFLY abundance normal; in moderate range. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

CITRUS FLAT MITE (Brevipalpus lewisi) - ARIZONA - Light on new fall growth at Deer Valley and Rainbow Valley, Maricopa County. (Ariz. Coop. Sur.).

ORNAMENTALS

A TORTRICID MOTH (Platynota sp.) - FLORIDA - Larvae general and severe on 7,500 of 10,000 azaleas at nursery in Apopka, Orange County. (Musgrove, Oct. 21). Control information requested. (Fla. Coop. Sur.).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - ALABAMA - Numerous adults "ragged" many chrysanthemum blossoms in home plantings at Monroeville, Monroe County. Some feeding damage to late rose and dahlia blossoms in south and central areas. (Lemons et al.).

MEALYBUGS (Pseudococcus spp.) - CALIFORNIA - P. longispinus adults heavy on leaves of phormium in nursery at Ontario, San Bernardino County, and heavy on daphne at Biggs, Butte County. P. obscurus heavy on leaves, flowers, twigs, and trunks of Oregon-grape nursery stock at Ukiah, Mendocino County. (Cal. Coop. Rpt.).

AN APHID (Cinara tujafilina) - NEW MEXICO - Moderate to heavy on arborvitae at Los Lunas, Valencia County, and at Albuquerque, Bernalillo County. (Heninger).

SPIDER MITES (Tetranychus spp.) - NEW MEXICO - Light to moderate on arborvitae, juniper, and other ornamentals in nurseries at Las Cruces, Dona Ana County. (Elson).

FOREST AND SHADE TREES

SOUTHERN PINE BEETLE (*Dendroctonus frontalis*) - Increasing in Spartanburg County, SOUTH CAROLINA, in coastal region of NORTH CAROLINA, and in several areas of LOUISIANA. Infested several spots over 100 acres in size around Kinston, Lenoir County, North Carolina. Infested up to 37 spots (up to 200 trees in each spot) in Blount County, TENNESSEE, at Cades Cove area in Great Smoky Mountains National Park; area inaccessible. (South. For. Pest Rptr., Oct.).

BLACK TURPENTINE BEETLE (*Dendroctonus terebrans*) - ARKANSAS - Increasing, infesting live trees 50-75 percent defoliated by hail at Camden area. (South. For. Pest Rptr., Oct.).

DOUGLAS-FIR BEETLE (*Dendroctonus pseudotsugae*) - CALIFORNIA - Decreasing in Klamath National Forest; epidemic of 1966-1967 apparently ending as predicted. (Cal. Coop. Rpt.).

A WEEVIL (*Cylindrocopturus eatoni*) - CALIFORNIA - Infesting 45 acres of ponderosa pines in McCauley Hill plantation, Stanislaus National Forest, Mariposa County. Infested approximately 4,500 trees. (Gilkey, USFS).

SILVER-SPOTTED TIGER MOTH (*Halisidota argentata*) - WASHINGTON - Small larvae noted defoliating larch October 7 near Port Angeles, Clallam County, and infesting Douglas-fir October 14 at Tacoma, Pierce County. Determined by V.M. Carolin. (Pennell).

A CONIFER SAWFLY (*Neodiprion pratti pratti*) - KENTUCKY - Defoliation killed many over-mature shortleaf pines on ridges in eastern area. Below normal rainfall past several years worsened problem. (South. For. Pest Rptr., Oct.).

BALSAM WOOLLY APHID (*Adelges piceae*) - NORTH CAROLINA - New infestation found in Balsam Mountains on Jones Knob, west of Waynesville. (South. For. Pest Rptr., Oct.).

PINE NEEDLE SCALE (*Phenacaspis pinifoliae*) - CALIFORNIA - Light to heavy on Jeffrey and lodgepole pines in South Lake Tahoe area, El Dorado County. (Hunt, CDF).

A MARGARODID SCALE (*Matsucoccus* sp.) - CALIFORNIA - Spreading from few trees along Cecilville and Callahan Road into South Fork of Scott River, Jackson and Rail Creek areas in Klamath National Forest. No trees killed yet, but potential increasing as defoliation increases. (Fowler, Dirksen, USFS).

MAN AND ANIMALS

SCREW-WORM (*Cochliomyia hominivorax*) - Total of 758 cases reported in U.S. November 3-9 as follows: TEXAS - Atascosa 37, Bandera 9, Bee 8, Bexar 6, Brewster 1, Brooks 21, Brown 1, Burnet 7, Caldwell 3, Callahan 1, Cameron 1, Clay 1, Coke 1, Coleman 3, Colorado 1, Comal 1, Concho 12, Coryell 1, Crockett 4, De Witt 14, Dimmit 30, Duval 32, Edwards 2, Frio 32, Gillespie 4, Goliad 9, Gonzales 5, Guadalupe 1, Hidalgo 16, Howard 1, Hudspeth 1, Jeff Davis 10, Jim Hogg 7, Jim Wells 19, Karnes 8, Kendall 2, Kenedy 1, Kent 1, Kerr 3, King 1, Kinney 49, Kleberg 2, Lampasas 1, La Salle 6, Live Oak 7, Llano 4, Maverick 13, McCulloch 3, Mason 2, Medina 45, Midland 1, Milam 3, McMullen 4, Mitchell 1, Nueces 1, Pecos 7, Presidio 6, Reagan 1, Real 3, Refugio 8, Runnels 4, San Patricio 9, San Saba 7, Scurry 1, Shackelford 1, Starr 36, Terrell 11, Tom Green 5, Upton 1, Uvalde 41, Val Verde 24, Victoria 1, Ward 1, Webb 33, Wilbarger 1, Willacy 5, Wilson 20, Young 1, Zapata 9. Zavala 33; ARIZONA - Graham 1, Maricopa 6, Mohave 1, Pima 2, Pinal 6, Santa Cruz 2, Yuma 1; CALIFORNIA - Imperial 2, Riverside 4, San Luis Obispo 4. Sterile screw-worm flies released: Texas 90,274,000; New Mexico 1,180,000; Arizona 11,020,000; California 1,500,000; Mexico 66,164,000. (Anim. Health Div.).

HORN FLY (Haematobia irritans) - OKLAHOMA - Ranged 25-50 per head on Major County cattle. (Okla. Coop. Sur.).

COMMON CATTLE GRUB (Hypoderma lineatum) - OKLAHOMA - Light numbers appearing in backs of cattle in Choctaw and Payne Counties. Averaged less than 1 per head in Payne County. (Okla. Coop. Sur.).

MOSQUITOES - NEW MEXICO - Becoming nuisance where overwintering in homes at Las Cruces area, Dona Ana County. (Durkin).

BLOODSUCKING CONENOSE (Triatoma sanguisuga) - OKLAHOMA - Adults taken from homes and outdoors in survey of Payne County. (Okla. Coop. Sur.).

BROWN RECLUSE SPIDER (Loxosceles reclusa) - TEXAS - Several detected in cardboard boxes in open areas of Wilbarger County. (Boring).

STORED PRODUCTS

LESSER BULB FLY (Eumerus tuberculatus) - NORTH DAKOTA - Larvae heavy in stored potatoes in Grand Forks County. (Schulz, Nov. 1).

BENEFICIAL INSECTS

CONVERGENT LADY BEETLE (Hippodamia convergens) - WASHINGTON - Aggregation estimated at 20,000 overwintering adults October 31 on North Fork of Ahtanum Creek, Yakima County, at about 2,800 feet elevation. (Johnson).

GREEN LACEWINGS (Chrysopa spp.) - ARIZONA - Adults averaged 10 per 100 sweeps of alfalfa in Maricopa County. (Ariz. Coop. Sur.).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

JAPANESE BEETLE (Popillia japonica) - Trapping results in MICHIGAN for 1968 as follows: Monroe and Lenawee Counties - 16 single finds around perimeter of currently regulated area; Warren - generally infested about 2,000 acres; Kalamazoo County - one rural find; Berrien County - generally infested about 4,600 acres. All surveys negative in cities of Lansing, Grand Rapids, and Kalamazoo. All surveys negative for season in NORTH DAKOTA, SOUTH DAKOTA, NEBRASKA, KANSAS, MINNESOTA, IOWA, and WISCONSIN. (PPC Cent. Reg., Sept. Rpt.).

MEXICAN FRUIT FLY (Anastrepha ludens) - CALIFORNIA - Catch of 21 sterile flies brings seasonal total to 277 from 58 trap locations. Trapped at San Ysidro, Otay Mesa, and San Diego. Flies trapped at San Diego, between 11 and 12 miles north of release stations at Tijuana. (Cal. Coop. Rpt.). MEXICO - Trapping survey begun in Territorio sur de Baja California to obtain information on infestation prior to initiation of sterile release program in October. Total of 233 traps installed at La Paz and 44 at San Antonio, about 40 miles south of La Paz. Collected 57 native flies from 12 properties at La Paz; none at San Antonio. (PPC Mex. Reg., Sept. Rpt.).

PINK BOLLWORM (Pectinophora gossypiella) - OKLAHOMA - Positive finds in Bryan, Love, Marshall, Cotton, and Tillman Counties from lint cleaner inspections in 21 counties during October. (Okla. Coop. Sur.). NEW MEXICO - Infested average of 22-88 percent of bolls at Carlsbad area, Eddy County. Infested 0-4 percent of bolls in northern Chaves County. (Mathews). No larval increase in green bolls in Hidalgo and Luna Counties; infested 0-8 percent of bolls. (Campbell). CALIFORNIA - Date of last collected moth in 1967 passed by one day in Kern County. Another 640,335 sterile moths released. No sterile moths collected in field; total for season remains at 19, the last taken October 2 in Oildale drop zone. Total of 6,810,555 moths released from Bakersfield facility through October 19. Fall weather and fog interfering with receipt and air drop of sterile moths. (Cal. Coop. Rpt.).

WEST INDIAN SUGARCANE ROOT BORER (Diaprepes abbreviatus) - FLORIDA - Adults collected November 4 on leaves of Hamlin orange at Plymouth, Orange County. (Van Pelt). This new infestation extends known range in Orange County. (Fla. Coop. Sur.).

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - CALIFORNIA - Number of infested properties remains at 19 on 13 city blocks at Clovis, Fresno County. Seasonal treatment completed. (Cal. Coop. Rpt.).

INSECT DETECTION

New County and Island Records

EUROPEAN EARWIG (Forficula auricularia) - MARYLAND - Nymphs medium around home at Fallston, Harford County. Collected by J. Hellman June 7, 1968. Determined by A.B. Gurney. (U. Md., Ent. Dept.).

A BARK BEETLE (Xylosandrus compactus) - HAWAII - Maui Island. (p. 1069).

CORRECTIONS

CEIR 18(44):1032 - EUROPEAN CORN BORER (Ostrinia nubilalis) - ARKANSAS - Delete note. See pages 1061-1062 this issue for revised note.

LIGHT TRAP COLLECTIONS

FLORIDA - Gainesville - 11/1-7, BL - Armyworm (Pseudaletia unipuncta) 5, beet armyworm (Spodoptera exigua) 6, black cutworm (Agrotis ipsilon) 6, corn earworm (Heliothis zea) 1, fall armyworm (S. frugiperda) 1. Monticello - 11/4-6, BL - Armyworm 2, black cutworm 58, corn earworm 6, variegated cutworm (Peridroma saucia) 8, yellow-striped armyworm (Prodenia ornithogalli) 6. MISSISSIPPI - Stoneville - 11/2-8, 39-81°F., precip. 0.65 in., 2 BL - Armyworm 54, beet armyworm 333, black cutworm 51, corn earworm 19, fall armyworm 24, granulate cutworm (Feltia subterranea) 49, variegated cutworm 1, yellow-striped armyworm 7. MISSOURI - Fair Grove - 10/31-11/6 - Armyworm 23, black cutworm 8, corn earworm 12, variegated cutworm 1, yellow-striped armyworm 3. TEXAS - Waco - 11/2-8, BL - Armyworm 24, beet armyworm 51, black cutworm 3, cabbage looper 1, corn earworm 5, fall armyworm 1, granulate cutworm 90, variegated cutworm 25. Brownsville - 11/2-8, 2BL, 49-88°F., precip. 0.67 in. - Armyworm 11, black cutworm 12, fall armyworm 10, granulate cutworm 9, salt-marsh caterpillar (Estigmene acrea) 3, tobacco budworm (H. virescens) 1, tobacco hornworm (Manduca sexta) 1, variegated cutworm 4, yellow-striped armyworm 13.

HAWAII INSECT REPORT

Rice - ASIATIC RICE BORER (*Chilo suppressalis*) larvae light in stems at Wailua, Kauai; infested about 1 percent of hills. First report since 1939. Unknown whether infestation from original or from new introduction. (Nishida).

Turf, Pasture - A GRASS WEBWORM (*Herpetogramma licarsialis*) damaged up to 80 percent of lawns and parks at Lihue, Hanamaulu, and Puhi on Kauai. Adults heavy in some pasture areas at Kapahi, Wailua, and Kipu. Larvae on Maui heavy in pastures at Haiku; adults heavy on lawn grasses at night in Pukalani. Heavily damaged lawns at Hilo, Hawaii Island; adults heavy in pastures at Kona, Kau, and Waimea. On Oahu spotty damage moderate to heavy in scattered areas, especially on windward side. Affected pastures, lawns, parks, and golf course. Undesirable plants growing in many damaged pasture areas at Kipahulu, Maui, and at Kualoa, Oahu. (Sugawa et al.).

Coffee - Larvae and adults of a BARK BEETLE (*Xylosandrus compactus*) heavy in wild coffee at Wailuku (Iao Valley), Maui. Infested healthy and dead twigs and branches. First report on Maui. (Ah Sam).

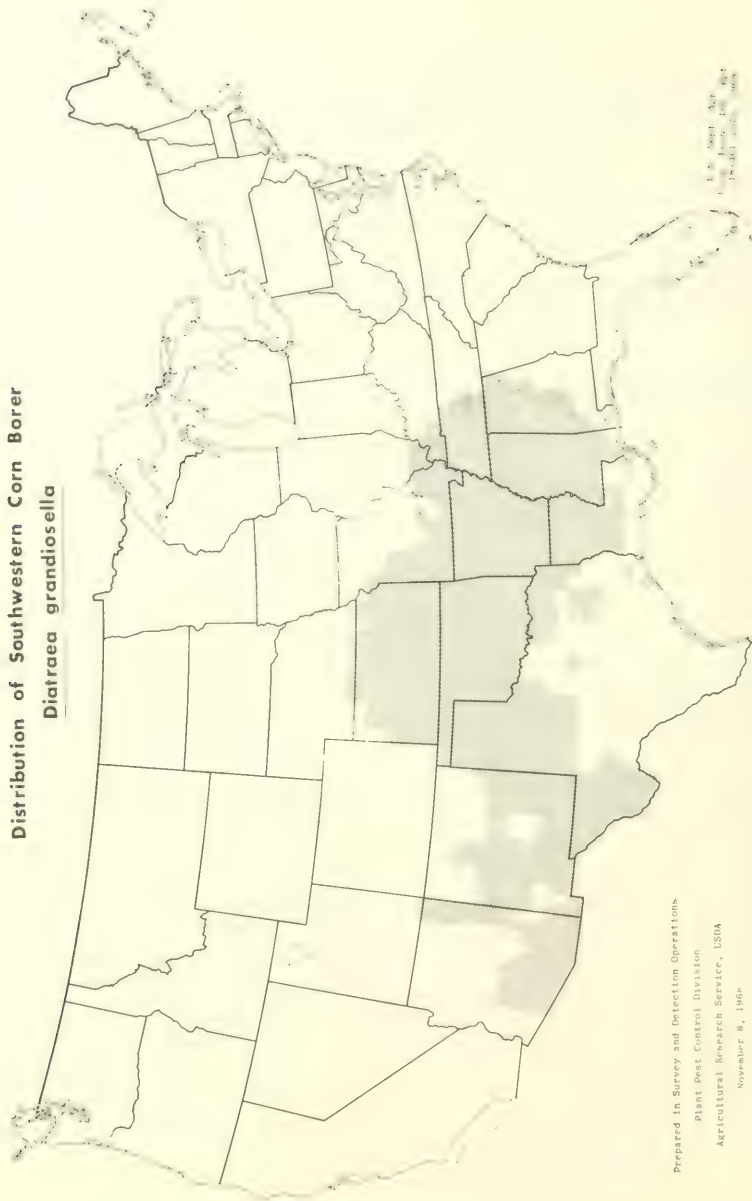
Fruit Trees - LARGE MANGO TIP BORER (*Bombotelia jocosatrix*) larvae few on young mango leaves at Wailua, Koloa, and Lihue on Kauai. (Sugawa). Larvae of a NOCTUID MOTH (*Phlegetonia delatrix*) caused light to medium foliar damage on mountain-apple (*Eugenia malaccensis*) at Kaneohe and Manoa, Oahu. Java-plum (*E. cumini*) only previously recorded host in Hawaii. (Nakao).

Ornamentals - CACTUS SCALE (*Diaspis echinocacti*)-severe on night-blooming cereus at Poipu, Kauai; all plants whitish. (Sugawa).

Beneficial Insects - LANTANA CERAMBYCID (*Plagiohammus spinipennis*) larvae moderate in lantana stems at Kau, Hawaii Island; larvae of LANTANA PLUME MOTH (*Platyptilia pusillodactyla*), LANTANA SEED FLY (*Ophiomyia lantanae*), LANTANA GALL FLY (*Eutreta xanthochaeta*) and LANTANA HISPID (*Uroplata girardi*) moderate to heavy on lantana blossoms, seeds, stems, and leaves, respectively, in many areas throughout State. Other introduced lantana insects remain generally light. (Funasaki).

Miscellaneous Pests - GIANT AFRICAN SNAIL (*Achatina fulica*) bait applications and surveillance continued at Kona on Hawaii Island and at Poipu and Wahiawa on Kauai. No live snails detected during October. (Yoshioka, Sugawa).

Distribution of Southwestern Corn Borer
Diatraea grandiosella



Prepared in Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service, USDA
November 8, 1964

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November 22, 1968

Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

All reports and inquiries pertaining to this release, including the mailing list, should be sent to:

Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG light to severe on wheat in Texas Panhandle. (p. 1073).

Total of 298 SCREW-WORM cases reported in southwest U.S. November 10-16 compared with 758 cases previous week. (pp. 1076-1077).

WINTER TICK heavy on cattle in Osage County, Oklahoma. (p. 1077).

Late buildup of PINK BOLLWORM evident in Mesilla and Pecos Valleys of New Mexico. (p. 1078).

Detection

New State records include an APHID in Arkansas, an ARMORED SCALE in Maryland, and a WEEVIL in Wisconsin. (p. 1078).

For new county and parish records see page 1078.

Special Reports

Golden Nematode Quarantine Map. Centerfold.

Scientific names of three economically important SPIDER MITES have been changed. (p. 1080).

Reports in this issue are for week ending November 15 unless otherwise indicated.

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WEATHER BUREAU'S 30-DAY OUTLOOK

MID-NOVEMBER TO MID-DECEMBER 1968

The Weather Bureau's 30-day outlook for mid-November to mid-December calls for temperatures to average below seasonal normals over most of the Nation except for near normal averages in the Great Lakes region and coastal areas of the Middle and North Atlantic States. The coldest areas relative to normal are indicated as the southern Plains and the gulf coast. Precipitation is predicted to exceed normal over the western third and eastern fourth of the Nation with about normal amounts in between. Owing to the low temperatures predicted, some of the precipitation over the northern half of the country and especially at higher elevations in the West, is expected to be in the form of snow.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$5.00 a year.

WEATHER OF THE WEEK ENDING NOVEMBER 18

HIGHLIGHTS: A cold, cloudy, stormy week with subzero temperatures occurring in The central Rockies and the Great Plains and heavy snow in the western and eastern mountains and parts of the northern Great Plains.

PRECIPITATION: A large storm moved up the Atlantic coast early in the week producing generous rains in the Piedmont and coastal areas and heavy snow in the Appalachians. Snow depths reached a foot or more in the mountains of the Carolinas and at spots farther north in Virginia, Maryland, Pennsylvania, New York, and New England. Winds gusted 40 to 70 m.p.h. along the middle Atlantic coast causing heavy damage. The storm began to subside about Wednesday and by Thursday forenoon, light flurries continued over the northern Appalachians from Pennsylvania to New England. As the storm decreased in the Northeast, a new storm developed in the Southwest. By Thursday morning, some mountain roads in Colorado had already become snow-clogged and snow was beginning to fall at higher elevations in northern Arizona and New Mexico. Rains soaked the lower regions and spread eastward to the Great Plains. Thunderstorms developed and a few tornadoes occurred in the Deep South. Damage was not generally extensive and injuries were relatively few. Weather of the week continued on page 1075.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

CORN LEAF APHID (*Rhopalosiphum maidis*) - NEW MEXICO - Light in late-maturing grain sorghum at Hobbs area, Lea County. (Mathews). OKLAHOMA - Averaged 65 per foot in Payne County barley and 15 per foot in Osage County wheat. (Okla. Coop. Sur.). INDIANA - Infested 26.89 percent fewer plants statewide in 1968. Degree of infestations in 1968 (compared with 1967): Light - 31.80 percent in 1968 (30.3 percent in 1967), moderate - 7.98 (28.0), and heavy - 3.51 (11.90). All infestations over 56 percent in northern districts and in the south-southeast district. Highest infestation (77 percent) in north-central district. (Huber, Nov. 8). MISSOURI - Mainly this aphid moderate, 20-60 per row foot, on southeast area barley. (Munson).

GREENBUG (*Schizaphis graminum* (In broad sense))* - CALIFORNIA - Nymphs light on Johnson grass at San Pasqual, San Diego County. (Cal. Coop. Rpt.). TEXAS - Maximum numbers ranged 10-200 per row foot of wheat in 12 panhandle counties surveyed November 12-13; highest (150-200 per foot) in Motley, Hall, and Swisher Counties. Wheat generally large; controls not needed yet. (Daniels). Light numbers, averaged about 10-15 per foot, widespread on wheat and oats near La Pryor, Zavala County. Very light at Batesville and other areas west of La Pryor. Some activity noted in Rolling Plains. (Tapscott, Boring). OKLAHOMA - Ranged 45-50 per row foot of Washita County wheat. Some fields sprayed. Generally ranged 1-12 per foot in Jackson, Cotton, Tillman, Kiowa, Payne, Noble, Pawnee, Osage, and Ellis Counties. (Okla. Coop. Sur.). KANSAS - Very light on southwest area wheat. None found in Ness, Rush, Barton, and Ellsworth Counties. (Redding). Ranged 1-11 per row foot in Gove and Lane Counties. Unchanged, 35-85 per foot, from levels of 2 weeks ago on Doniphan and Atchison County wheat. (Simpson). NEBRASKA - Activity in panhandle area wheat reduced due to cool weather. (Hagen). SOUTH DAKOTA - Continues to damage winter wheat in west-central area in spite of several nights with temperatures in 20's and some snow cover for 2 days. Aerial application of insecticides continued when temperatures above 40°F. (Jones).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - OKLAHOMA - Averaged 500 per 10 sweeps of Payne County alfalfa; parasites active. (Okla. Coop. Sur.). NEW MEXICO - Ranged 5-8 per 10 trifoliate leaves on alfalfa in Albuquerque area, Bernalillo County. (Heninger). ARIZONA - Averaged 500 per 100 sweeps on alfalfa at Eloy and Toltec areas, Pinal County. (Ariz. Coop. Sur.). CALIFORNIA - Medium on alfalfa plantings at El Centro, Imperial County. (Cal. Coop. Rpt.). WASHINGTON - A winged migrant captured August 21 from yellow trap pan at Yakima, Yakima County. Determined by L.M. Russell. (Landis).

CORN, SORGHUM, SUGARCANE

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - KANSAS - Percent infestation by county: Chase 4-20, Lyon 4-8, Butler 12-20, Marion 0-4; four fields examined in each county. (Redding). NEW MEXICO - Larvae in about 50 percent of cornstalks in Lea County and 25 percent of cornstalks in Chaves County. Ratio of larvae per stalk lower in 1968 than in 1967 in Chaves County. (Mathews).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - SOUTH DAKOTA - Fall abundance survey indicated apparent increase of populations to 1966 levels in Sanborn County. No appreciable change compared with 1967 in Hanson and McCook Counties. (Jones).

SORGHUM MIDGE (*Contarinia sorghicola*) - OKLAHOMA - Damaged 85 percent of grain per sorghum head in Weatherford area, Custer County. (Okla. Coop. Sur.).

*According to recent taxonomic studies by L.M. Russell. This aphid on sorghum appears to be this species.

SMALL GRAINS

WINTER GRAIN MITE (*Penthaleus major*) - OKLAHOMA - Ranged 20-50 per row foot of wheat in Cotton, Jackson, and Tillman Counties; averaged 3 per foot in Pawnee County field. (Okla. Coop. Sur.).

TURF, PASTURES, RANGELAND

GRANULATI CUTWORM (*Peltia subterranea*) - CALIFORNIA - Larvae medium on dichondra lawns at Kingsburg, Fresno County. Cutworms unusually abundant in dichondra this fall. (Cal. Coop. Rpt.).

FIRE ANT (*Solenopsis geminata*) - TEXAS - Many mounds in pastureland and along highway rights-of-way at Plantersville, Anderson, Roans Prairie, and Shiro areas of Grimes County. (Barham, Green).

MARCH FLIES (*Dilophus* spp.) - ARKANSAS - *D. serotinus* collected from Jefferson County and determined by E.P. Rouse. (Boyer, Nov. 8). *D. serotinus* numerous at Pine Bluff. Large numbers in lawns. Also on buildings and outdoor clotheslines. (Boyer). CALIFORNIA - *D. orbatus* adults heavy on lawns at Pleasant Hill, Contra Costa County, and at LaRkspur, Marin County. Nuisance to homeowners this fall. (Cal. Coop. Rpt.).

FORAGE LEGUMES

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Adults averaging 250 per 100 sweeps of Pinal County alfalfa. (Ariz. Coop. Sur.).

PEA APHID (*Acyrtosiphon pisum*) - ARIZONA - Averaging 200 per 100 sweeps of Pinal County alfalfa. (Ariz. Coop. Sur.). OKLAHOMA - Averaged 15 per 10 sweeps on alfalfa checked in Payne County. (Okla. Coop. Sur.).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Decreased on Pinal County alfalfa; averaging 150 adults and 100 nymphs per 100 sweeps. (Ariz. Coop. Sur.). OKLAHOMA - *L. lineolaris* averaged 9 per 10 sweeps of Payne County alfalfa. (Okla. Coop. Sur.).

ALFALFA WEEVIL (*Hypera postica*) - UTAH - Adults numerous on duff beneath oak brush at north Farmington, Davis County, one-third mile from alfalfa field. (Knowlton, Nov. 15). WISCONSIN - Reported for first time in Sauk County. (Wis. Ins. Sur.).

COTTON

BOLL WEEVIL (*Anthonomus grandis*) - ALABAMA - Recent below freezing temperatures throughout State destroyed larvae in top squares and bolls; remaining younger adults seeking hibernation. Weather of past 20-75 days and very high weevil population helped high number of adults to enter hibernation. Recent 20°F. temperatures in northern area should not affect survival. (McQueen).

BOLLWORMS (*Heliothis* spp.) - ALABAMA - Recent below freezing temperatures throughout State destroyed host crops and larvae in top squares and bolls. Due to heavy larval population of past 20-90 days, high number of pupae should be in soil throughout State. (McQueen).

SUGARBEETS

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Averaging 2 per plant in Pinal County. (Ariz. Coop. Sur.).

COLE CROPS

POPLAR PETIOLE GALL APHID (Pemphigus populitransversus) - ALABAMA - Alates moved to turnips and other plant roots in central area. Nymphs 10-15 per plant on developing turnip roots at several Lee County locations. Widespread infestations possible in commercial plantings and home gardens. (McQueen).

GENERAL VEGETABLES

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Larvae persist on Pinal County lettuce; averaging 2 per head. (Ariz. Coop. Sur.).

Weather of week continued from page 1072.

A weekend storm dumped heavy snow in the northern Great Plains. Duluth, Minnesota, measured 18 inches on the ground Monday morning, November 18. A storm off the north Pacific coast brought several inches of rain along the coast and heavy snow in the Oregon Cascades and California Sierras. One of the earliest snowstorms of record in the Appalachians dumped from 6 to 15 inches from South Carolina to New England.

TEMPERATURE: Temperatures averaged slightly above normal in the Northwest, in northern Minnesota, and from Arizona to Texas, and below normal over most of the rest of the Nation. Portions of the central Great Plains averaged 4° to 6° colder than normal. A cooling trend occurred over most of the western half of the Nation. Most of Montana and Wyoming remained below 32° on Saturday and Sunday. Mild temperatures continued in Texas through most of the week becoming somewhat cooler in northern Texas over the weekend. Cold air funneled into the Deep South behind the storm which was centered off the South Carolina coast on Monday. On Monday afternoon the temperature at Atlanta reached 39°, the same as Bismarck, North Dakota. The following morning, the minimum temperatures at those locations were: Atlanta 25°, Bismarck 26°. At this time of year, 39° is about normal for an afternoon reading at Bismarck and for an early morning temperature at Atlanta. Most of the East warmed late in the week with maximums reaching the 50's in the Ohio River Valley and the 80's in Florida. (Summary supplied by Environmental Data Service, ESSA.)

DECIDUOUS FRUITS AND NUTS

AFGERIID MOTHS - ALABAMA - Synanthedon pictipes and Sanninoidea exitiosa larvae heavy at and below ground line in 95-100 percent of one to 8-year-old peach and plum trees at several locations in Lee and Jefferson Counties. Heavy in nearby ornamental fruit trees. (McQueen).

WALNUT HUSK FLY (Rhagoletis completa) - UTAH - Larvae numerous in black walnuts at Sunset, Davis County. (Knowlton, Nov. 15).

OTHER TROP. & SUBTROP. FRUITS

A WEEVIL (Brachyrhinus cribricollis) - CALIFORNIA - Medium on olive trees at Beaumont, Riverside County. (Cal. Coop. Rpt.).

ORNAMENTALS

STRIPED MEALYBUG (Ferrisia virgata) - CALIFORNIA - Collected on wistaria, Japanese privet, grape, oriental plane, and catalpa at Redding, Shasta County. Mealybugs on wistaria heavily parasitized by pupae of parasitic flies. Only other known infestation in State occurs in Imperial County. (Cal. Coop. Rpt.).

A CONIFER APHID (Cinara sp.) - NEW MEXICO - Light to heavy on ornamental junipers at Albuquerque area, Bernalillo County. (Heninger).

A SNAIL (Vallonia pulchella) - ARIZONA - Heavy on wandering jew and dichondra at home in northwest Phoenix, Maricopa County. Determined by T. Kono. (Ariz. Coop. Sur., Nov. 8).

FOREST AND SHADE TREES

CONIFER APHIDS (Eulachnus spp.) - ALABAMA - Light numbers of alates and groups of nymphs appearing on loblolly pines in central area. The lady beetles Hippodamia convergens, Cycloneda sanguinea, and Chilocorus stigma feeding on aphids during warmer periods: lady beetles very active in spite of 25°F. temperatures. (McQueen).

TWIG GIRDLER (Oncideres cingulata) - TEXAS - Medium and widespread on oaks, pecans, and elms near Giddings, Lee County. (Spivey).

APHIDS - CALIFORNIA - Myzocallis walshii nymphs and adults heavy on oak tree nursery stock at Selma, Fresno County. All stages of Eriosoma americanum heavy on fruitless mulberry leaves at Biggs, Butte County. Late, medium numbers of Drepanaphis acerifoliae on maple trees at Fresno, Fresno County. First frosts occurred November 14; should retard or eliminate many pests. (Cal. Coop. Rpt.).

MAN AND ANIMALS

SCREW-WORM (Cochliomyia hominivorax) - Total of 298 cases reported in U.S. November 10-16 as follows: TEXAS - Atascosa 11, Bandera 5, Bee 3, Bexar 1, Brooks 10, Burnet 1, Cameron 1, Coke 1, Coleman 1, Concho 4, Crockett 1, Culberson 1, De Witt 5, Dickens 2, Dimmit 20, Duval 17, Edwards 1, Fayette 1, Frio 12, Gillespie 1, Goliad 5, Guadalupe 2, Hidalgo 5, Jeff Davis 2, Jim Hogg 2, Jim Wells 7, Karnes 5, Kendall 1, Kennedy 2, Kerr 2, Kinney 19, Kleberg 3, La Salle 10, Live Oak 7, Lynn 1, Maverick 2, Medina 17, Midland 1, McMullen 1, Pecos 6, Presidio 2, Refugio 1, Runnels 1, San Patricio 3, Starr 7, Stephens 1, Terrell 5, Throckmorton 1, Tom Green 1, Upton 1, Uvalde 15, Val Verde 10, Webb 13, Wilson 5, Zavala 16; ARIZONA - Maricopa 5, Mohave 1, Pinal 8, Yuma 1;

GOLDEN NEMATODE

NEW YORK STATE QUARANTINE

COUNTIES ENTIRELY COLORED ARE COMPLETELY REGULATED

COUNTIES PARTIALLY COLORED ARE PARTIALLY REGULATED



FROM BLUE INTO OR THROUGH WHITE.

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AGENT FOR ASSISTANCE REGARDING EXACT
AREAS UNDER REGULATION AND REQUIREMENTS
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U. S. Department of Agriculture
Agricultural Research Service
Plant Pest Control Division
Cooperating with the State of New York.

SEE REVERSE SIDE FOR INFORMATION CONCERNING CERTIFICATION OF REGULATED ARTICLES.

Revised October 16, 1968

GOLDEN NEMATODE

NEW YORK STATE QUARANTINE

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RESTRICTIONS ARE IMPOSED ON THE
MOVEMENT OF REGULATED ARTICLES
FROM BLUE INTO OR THROUGH WHITE.

CONSULT YOUR STATE OR FEDERAL PLANT
PEST CONTROL INSPECTOR OR YOUR COUNTY
AGENT FOR ASSISTANCE REGARDING EXACT
AREAS UNDER REGULATION AND REQUIREMENTS
FOR MOVING REGULATED ARTICLES

U. S. Department of Agriculture
Agricultural Research Service
Plant Pest Control Division
Cooperating with the State of New York.

SEE REVERSE SIDE FOR INFORMATION CONCERNING CERTIFICATION OF REGULATED ARTICLES.

Revised October 16, 1968

THE FOLLOWING CROPS OR ARTICLES MUST BE MOVED UNDER CERTIFICATE
OR PERMIT YEAR-ROUND EXCEPT AS INDICATED:

1. Potatoes (other than seed).*
2. Potatoes (seed).
3. Tomato and eggplant transplants.
4. Root crops.*
5. Soil or sod.

Soil samples of any size shipped to U.S. Army Corps of
Engineers Soil Laboratories within the conterminous U.S.
are exempt.

6. Plants with roots.*
7. True bulbs, corms, rhizomes and tubers of ornamental
plants.*

CALIFORNIA - Riverside 2. Total of 901 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Sonora 227, Chihuahua 205, Coahuila 254, Nuevo Leon 125, Tamaulipas 90. Total of 72 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 78,468,000; New Mexico 980,000; Arizona 9,570,000; California 3,100,000; Mexico 84,450,000. (Anim. Health Div.).

HORN FLY (*Haematobia irritans*) - OKLAHOMA - Ranged 25-50 per head on cows checked in Payne County. (Okla. Coop. Sur.).

LONG-NOSED CATTLE LOUSE (*Linognathus vituli*) - TEXAS - Heavy on faces of beef calves near Granbury, Hood County. (Hillman).

WINTER TICK (*Dermacentor albipictus*) - OKLAHOMA - All stages averaged over 1,000 per head on cattle checked in eastern Osage County. (Okla. Coop. Sur.).

HOUSEHOLDS AND STRUCTURES

AN EARWIG (*Labidura riparia*) - ARIZONA - General nuisance around entryways to homes at night in Salt River Valley urban areas of Maricopa County. (Ariz. Coop. Sur.).

STORED PRODUCTS

INDIAN-MEAL MOTH (*Plodia interpunctella*) - SOUTH CAROLINA - Numerous on outsides of bags of peanut meal feed in Pickens County. Determined by R.C. Fox. (Nettles, Nov. 13).

HIDE BEETLE (*Dermestes maculatus*) - MISSOURI - Adults and larvae numerous in bales of rabbit pelts in warehouse of hat factory in Maries County. Feeding caused serious manufacturing problems. Mostly found in pelts imported from outside of United States. (Peters).

SAW-TOOTHED GRAIN BEETLE (*Oryzaephilus surinamensis*) - MINNESOTA - Caused nearly every insect infestation found in stored products. (Minn. Ins. Rpt., Nov. 8).

BENEFICIAL INSECTS

CONVERGENT LADY BEETLE (*Hippodamia convergens*) - NEW MEXICO - Adults and pupae very abundant on infested junipers at Alameda, Bernalillo County. (Heninger).

GREEN LACEWINGS (*Chrysopa* spp.) - ARIZONA - Larvae averaging 30 per 100 sweeps of Pinal County alfalfa. (Ariz. Coop. Sur.).

A STINK BUG (*Stiretrus anchorago*) - SOUTH CAROLINA - Preying on nymphs of *Epilachna varivestis* (Mexican bean beetle) at Columbia, Richland County. Determined by R.C. Froeschner. (McAlister, Nov. 13).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

KHAPRA BEETLE (*Trogoderma granarium*) - ARIZONA - Surveys negative to November 15, 1968. (PPC).

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1. Potatoes (other than seed).*
2. Potatoes (seed).
3. Tomato and eggplant transplants.
4. Root crops.*
5. Soil or sod.
Soil samples of any size shipped to U.S. Army Corps of Engineers Soil Laboratories within the conterminous U.S. are exempt.
6. Plants with roots.*
7. True bulbs, corms, rhizomes and tubers of ornamental plants.*
8. Hay, straw and plant litter.*
9. Used farm equipment (vehicles, implements, bags, containers and articles necessary, desirable or used in the production and marketing of crops and the movement of soil).
10. Used construction equipment.

* Under provisions of the New York State Golden Nematode Quarantine regulated articles indicated may be moved from noninfested parts of quarantined areas without certificate or permit. Refer to the New York State Quarantine and regulations for conditions of such movement.

MEDITERRANEAN FRUIT FLY (*Ceratitis capitata*) - ARIZONA - Trapping in Pima and Santa Cruz Counties completed at end of October 1968; results negative. Trapping in Yuma County started November 1, 1968. Experimental trap used. (PPC).

MEXICAN FRUIT FLY (*Anastrepha ludens*) - ARIZONA - Trapping in Pima and Santa Cruz Counties completed at end of October 1968; results negative. Trapping in Yuma County started November 1, 1968. Experimental trap used. (PPC).

PINK BOLLWORM (*Pectinophora gossypiella*) - NEW MEXICO - Late buildup evident in Mesilla and Pecos Valleys; generally much lighter than in past 4 years. (N.M. Coop. Rpt.). ARIZONA - During October, 534 lint cleaner inspections made. Larval counts below those at same time in 1967. About 60 percent of cotton picked and ginned. (PPC). CALIFORNIA - First pick about 70 percent completed in Kern County; harvest about two weeks ahead of schedule; yields good. Inspection of over 360,000 green bolls this season negative. Sterile moth drops averaging 60,000 per day. All San Joaquin Valley counties negative so far this season. First pick 75-90 percent completed in Riverside County; few growers have already shredded and plowed once. First pick about 20 percent completed in Imperial Valley proper. In Bard area first pick about 90 percent and second pick 70 percent completed. Shredding and plowing progressing well. (Cal. Coop. Rpt.).

SWEETPOTATO WEEVIL (*Cylas formicarius elegantulus*) - LOUISIANA - Adults medium on sweetpotatoes at Coushatta, Red River Parish, for new parish record. Collected by F. Harper, November 7, 1968. Determined by V.H. Owens. (PPC).

WEST INDIAN SUGARCANE ROOT BORER (*Diaprepes abbreviatus*) - FLORIDA - Adults still being found on leaves of orange and grapefruit trees at Zellwood and Plymouth area of Orange County. (Bentley et al., Nov. 8).

INSECT DETECTION

New State Records

AN APHID (*Myzocallis melanocera*) - ARKANSAS - Collected on oak tree in Pulaski County by J.W. Stewart, September 29, 1967. Determined by L.H. Rolston. (Boyer).

AN ARMORED SCALE (*Diaspidiotus osborni*) - MARYLAND - On birch near Port Republic, Calvert County. Collected by C.W. McComb, May 8, 1968. Determined by J.A. Davidson. (U. Md., Ent. Dept.). This is the first published record for the State. (PPC).

A WEEVIL (*Polydrusus sericeus*) - WISCONSIN - Apparently from elm at Madison, Dane County. Collected by G. Wilhelm, June 11, 1968. Determined by R.E. Warner. (Wis. Ins. Sur.).

New County and Parish Records

ALFALFA WEEVIL (*Hypera postica*) - WISCONSIN - Sauk County. (p. 1074).

SWEETPOTATO WEEVIL (*Cylas formicarius elegantulus*) - LOUISIANA - Red River Parish. (p. 1078).

HAWAII INSECT REPORT

Corn - CORN PLANTHOPPER (Peregrinus maidis) nymphs and adults moderate in young cornfield at Halawa, Oahu. (Higa).

General Vegetables - CARMINE SPIDER MITE (Tetranychus cinnabarinus) heavy to severe on many crops, especially snap beans and cucumbers at Waianae and Waimanalo, Oahu. Unusually heavy at this time due to extremely warm temperatures of past weeks. (Yamamoto, Sato). BEET ARMYWORM (Spodoptera exigua) and LEAF MINER FLIES (Liriomyza spp.) moderate on green onions at Waianae, Oahu; trace to light on green onions at Koko Head and Waimanalo. (Ohashi). TOMATO RUSSET MITE (Aculops lycopersici) unusually heavy in tomato field at Waianae, Oahu. Normally negligible to trace in commercial tomato plantings. (Yamamoto).

Fruits - Large MANGO TIP BORER (Bombotelia jocosatrix) larvae feeding on mango blossoms on a tree at Manoa, Oahu; about 6 larvae per blossom spray. Previously known to feed only on young mango foliage in State. (Au). Larvae of a NOCTUID MOTH (Phlegetonia delatrix) moderate to heavy; continued to damage young foliage of mountain-apple in backyards on Oahu. To date, infestations noted at Kaneohe, Manoa, Pauoa, and Palolo. (Wong, Au). An APHID (Pentalonia nigronervosa) heavy on terminal leaves of backyard banana plants at Laie, Oahu. (Funasaki).

General Pests - CHINESE ROSE BEETLE (Adoretus sinicus) adults heavy, attracted to night lights, at Makawao, Maui; defoliated rose and apple plantings. (Miyahira).

Man and Animals - MOSQUITOES - Collected 772 Aedes vexans nocturnus and 11,399 Culex pipiens quinquefasciatus in 48 light traps on Oahu during October. Aedes catches highest at Kahuku (267). Culex high at Kawailoa (2,382), Kailua (2,231), and Nanakuli (1,745). (Mosq. Cont. Br., Dept. of Health).

Beneficial Insects - Many larvae (8 per leaf) and few adults of a LADY BEETLE (Azya luteipes) preying on Coccus viridis (green scale) which heavily infested plumeria trees (Singapore cultivar) at Kaunakakai, Molokai, in late October. (Nakao).

Miscellaneous Pests - Large numbers of a STINK BUG (Plautia stali), attracted by lights, swarmed on windows of several residences at Laie Point, Oahu, in mid-October and on November 12. Area surveyed to determine host. (Funasaki).

LIGHT TRAP COLLECTIONS

FLORIDA - Gainesville - 11/8-14, 2BL - Armyworm (Pseudaletia unipuncta) 2, black cutworm (Agrotis ipsilon) 3, fall armyworm (Spodoptera frugiperda) 2, granulate cutworm (Feltia subterranea) 1. MISSISSIPPI - Stoneville - 11/9-15, BL, 32-71°F., precip. 0.70 - Armyworm 23, beet armyworm (Spodoptera exigua) 4, black cutworm 50, fall armyworm 26, granulate cutworm 16, variegated cutworm (Peridroma saucia) 1. TEXAS - Brownsville - 11/9-15, 2BL, 41-85°F., precip. 0.03 - Armyworm 127, black cutworm 220, cabbage looper (Trichoplusia ni) 9, fall armyworm 1, granulate cutworm 1, salt-marsh caterpillar (Estigmene acrea) 5, variegated cutworm 20, yellow-striped armyworm (Prodenia ornithogalli) 2. Waco - 11/9-15, BL - Armyworm 53, beet armyworm 16, black cutworm 11, granulate cutworm 22, variegated cutworm 18.

CHANGE IN SCIENTIFIC NAME

Names of the Two-Spotted Spider Mite and the Carmine Spider Mite to be Redesignated

Floyd F. Smith and Edward W. Baker 1/

In the most recent list of approved common names ("Common Names of Insects Approved by the Entomological Society of America." Ent. Soc. Amer. Bul. 11(4):290, 301, 316, 1965), the name of the two-spotted spider mite was changed from Tetranychus telarius (L.) to T. urticae Koch, and the name of the carmine spider mite was changed from T. cinnabarinus (Boisduval) to T. telarius (L.). Entomologists and acarologists concerned with mite problems have objected to these changes because of confusion in the literature. The changes were made in response to proposals by Gudo Dosse and H. Bruce Boudreaux to the International Committee on Scientific Names. G.L. van Eynhoven concurrently made counter proposals and arguments to the same committee. The committee, which includes G.O. Evans, had postponed final action on the proposed changes because of the lack of agreement among recognized specialists. At the Congress of Acarology, held in 1967 at the University of Nottingham, England, Boudreaux and Eynhoven came to the following agreement in discussions with Evans and prepared a joint statement and recommendation to the committee. They now propose: (1) To retain the name T. urticae Koch for the two-spotted spider mite, which is green; and (2) to continue the use of T. cinnabarinus (Boisduval), which is red, as the name for the carmine spider mite in Europe, America, and Japan. Both men believe that more than one species of red cinnabarinus may be involved. If more than one species is found, future designations can refer them to a cinnabarinus complex or by species names other than cinnabarinus. This joint agreement is highly important in establishing the identity of two economically important spider mites and averting confusion in the literature.

Change of Name of the Strawberry Spider Mite

Edward W. Baker 1/

The scientific name of the strawberry spider mite has been known almost worldwide as Tetranychus atlanticus McGregor, 1941 (see "Common Names of Insects Approved by The Entomological Society of America." Ent. Soc. Amer. Bul. 11(4):300, 316, 1965). In 1961 B.A. Wainstein of USSR synonymized this species with T. turkestani Ugarov and Nikolski, 1937. Inadequate figures and lack of Russian specimens at that time prevented further checking by us. The late Dr. A.E. Pritchard eventually obtained specimens of T. turkestani from southern USSR, and after long study of those specimens I have come to the conclusion that T. atlanticus and T. turkestani are the same species. Tetranychus turkestani Ugarov and Nikolski is the name to be used for the strawberry spider mite.

1/ Entomology Research Division, Agr. Res. Serv., USDA, Beltsville, Md. and Washington, D.C., respectively.

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Cooperative
ECONOMIC INSECT
REPORT

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

All reports and inquiries pertaining to this release, including the mailing list, should be sent to:

Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG increasing in wheat in Scotts Bluff and Banner Counties, Nebraska, and in western Oklahoma; economic in Motley and Karnes Counties, Texas. (p. 1083).

BEE T ARMYWORM and WESTERN FLOWER THRIPS heavy in alfalfa in Imperial County, California. (p. 1084).

CABBAGE LOOPER continues main problem on lettuce in southern Arizona. (p. 1085).

WESTERN PINE BEETLE destroying pine in Sierra National Forest and CALIFORNIA OAKWORM defoliation heavy in 1,000-acre oak stand in San Diego County, California. (p. 1087).

WINTER TICK very heavy on cattle in Canadian County, Oklahoma. (p. 1088).

Detection

New State records include a GELECHIID MOTH and an APHID in Maryland. (p. 1087).

For new county and island records see page 1091.

Reports in this issue are for week ending November 22 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING NOVEMBER 25

HIGHLIGHTS: Temperatures ranged widely. Mild weather predominated over the northern Great Plains. Freezing temperatures occurred in northern Florida. Light to moderate precipitation fell in the East. Much of the West received no rain.

PRECIPITATION: Rain fell along the northern Pacific coast and snow in the Cascades on several days during the week. Widespread precipitation also occurred early in the week in the eastern half of the United States -- snow flurries from the Dakotas to northern New England and southward to the southern Appalachians and rain along the Atlantic coast from southern New England to Florida. Skies cleared after midweek and after a day or so with only light scattered precipitation, snow began falling in the western mountains. A cold front produced showers from northeastern Texas to the Ohio River Valley on Saturday and from southern Louisiana to New England on Sunday. At week's end a frontal system is producing snow from the central Rockies to the northern Great Plains.

TEMPERATURE: A frigid blast of Canadian air overspread the vast region from the Rocky Mountains to the Atlantic Ocean. By Wednesday morning the cold had penetrated the Deep South and New Orleans, Louisiana, registered 30°. On Thursday morning, Richmond, Virginia, and Raleigh, North Carolina, registered 20° and 18°, respectively. As the cold air moved southeastward to the gulf and the Atlantic Ocean a warming trend began in the West. By Wednesday afternoon, temperatures along the eastern slope of the Rockies had climbed into the 60's. Havre, Montana, warmed to 65° on Wednesday -- 10° warmer than Tampa, Florida. The East warmed late in the week with afternoon readings in the 60's as far north as New York City by Sunday. Colder air was invading mid-America, however, and afternoon temperatures on Sunday were generally in the 40's over the northern Great Plains and the 50's from the central Great Plains to the Ohio River Valley. (Summary supplied by Environmental Data Service, ESSA.)

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

BEEF LEAFHOPPER (*Circulifer tenellus*) - CALIFORNIA - Averaged one per 20 sweeps in sugarbeets in Imperial Valley, Imperial County; only occasional curly top damage in most fields. Averaged 3 per sweep on saltbush in Imperial County and Coachella Valley, Riverside County. Infestations scattered in Burrell area, Fresno County; no treatments required on roadside hosts. Remains heavy, 20-30 per sweep, in portions of Kern County; controls still necessary. Treated 964 acres and 394 miles of roadside hosts in Fresno, Kings, and Kern Counties past week. (Cal. Coop. Rpt.).

CORN LEAF APHID (*Rhopalosiphum maidis*) - ARIZONA - This species, *Heterococcus* spp. (mealybugs), and *Aleurocybotus occiduus* (a whitefly) heavy on experimental broom corn at Yuma, Yuma County. Destroyed experimental plot of Johnson grass in same area. (Ariz. Coop. Sur.). NEW MEXICO - *R. maidis* light on winter grain in Luna and Hidalgo Counties. (Campbell).

GREENBUG (*Schizaphis graminum*) - NEBRASKA - Increased in wheat in southern Scotts Bluff and Banner Counties. Some fields yellowing; controls being applied. (Hagen). ARKANSAS - Decreased in small grain in northwest area; survey negative November 16-22. (Boyer). OKLAHOMA - Increasing in wheat in southwest, northwest, and panhandle areas November 16-17; 80 percent of population killed due to low temperature in Crescent area, Logan County. Currently ranged 1-18 per linear foot in wheat in Logan, Oklahoma, Cotton, Tillman, and Payne Counties. (Okla. Coop. Sur.). TEXAS - Damaging small grains in Motley County; some controls in progress. Destroyed some wheat in western Karnes County. Very light, less than 1 per row foot, on wheat and oats near Eagle Pass, Maverick County. (McNally et al.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - MISSISSIPPI - Adults and nymphs light, 7 per 50 sweeps, on Oktibbeha County alfalfa November 9-15. Averaged 20 per 50 sweeps on alfalfa in same county November 16-22. (Dinkins). ARKANSAS - Decreased in northwest alfalfa area due probably to subfreezing temperatures. Only occasional aphid noted. (Boyer). OKLAHOMA - Ranged 10-160 per square foot in alfalfa in Logan, Oklahoma, and Payne Counties. (Okla. Coop. Sur.). ARIZONA - Ranged 150-450 per 100 sweeps in alfalfa at Yuma, Yuma County. These fields infested in past years. (Ariz. Coop. Sur.).

CORN, SORGHUM, SUGARCANE

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - ALABAMA - Larvae very light in corn stubble in 2 late fields near Independence, Autauga County. These fields about 12-15 miles east of first infestations in Autauga County in 1967. (Rainwater et al.). NEW MEXICO - Larvae generally light in all corn checked in Dona Ana, Luna, Hidalgo, Sierra, and Otero Counties. (Elson, Campbell).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - ALABAMA - Overwintering larvae very light in most of 10 cornfields examined near Independence, Autauga County, and near Clanton, Chilton County. Several hundred larvae collected in small cornfield in Autauga County. (Rainwater et al.).

SMALL GRAINS

ENGLISH GRAIN APHID (*Macrosiphum avenae*) - MISSISSIPPI - Adults and nymphs light to moderate, 20-30 per 50 sweeps, on winter wheat in Clay and Oktibbeha Counties. (Dinkins, Nov. 15). ARKANSAS - Only occasional aphid found in small grain in State. (Boyer).

TURF, PASTURES, RANGELAND

GRANULATE CUTWORM (*Feltia subterranea*) - CALIFORNIA - Medium to heavy in lawns at Gilroy, Santa Clara County. Warm weather and moisture favored continuation of infestation this season. (Cal. Coop. Rpt.).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Heavy numbers overwintering in ditch banks next to Bermuda grass seed fields at Yuma, Yuma County. (Ariz. Coop. Sur.).

FORAGE LEGUMES

PEA APHID (*Acyrtosiphon pisum*) - MARYLAND - Averaged 100+ per sweep in 20 acres of alfalfa near Rhoadesdale, Dorchester County. (U. Md. Ent. Dept.). ARKANSAS - Decreased in alfalfa and vetch in northwest area. Ranged 5-6 per square foot in vetch, but only occasional aphid noted in alfalfa. (Boyer). OKLAHOMA - Remains light in most of State. Ranged 8-12 per 10 sweeps in alfalfa in Jefferson County and 0-10 per square-foot in Payne, Logan, and Oklahoma Counties. (Okla. Coop. Sur.). TEXAS - Large numbers damaged Motley County alfalfa. (Pallmeyer). NEW MEXICO - Light in alfalfa in Dona Ana, Luna, Hidalgo, and Sierra Counties. (Campbell).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - MISSISSIPPI - Adults light. 5 per 50 sweeps. on Oktibbeha County alfalfa November 9-15. Adults 8 per 50 sweeps in alfalfa in same county November 16-22. (Dinkins). ARIZONA - Counts per 100 sweeps in alfalfa averaged 300 at Yuma, Yuma County, and 200 at Casa Grande, Pinal County. (Ariz. Coop. Sur.).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Decreased; adults averaged 125 and nymphs 80 per 100 sweeps in alfalfa in Pinal County. Counts per 100 sweeps in alfalfa averaged 120 at Cochise, Cochise County, and 400 at Yuma, Yuma County. (Ariz. Coop. Sur.). MISSISSIPPI - *L. lineolaris* adults 10 per 50 sweeps in Oktibbeha County alfalfa. (Dinkins, Nov. 15).

BEET ARMYWORM (*Spodoptera exigua*) - ARIZONA - Averaged 300 per 100 sweeps in alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.). CALIFORNIA - This species and *Frankliniella occidentalis* (western flower thrips) heavy in 275 acres of alfalfa at Holtville, Imperial County. (Cal. Coop. Rpt.).

YELLOW-STRIPED ARMYWORM (*Prodenia ornithogalli*) - ARIZONA - Averaged 150 per 100 sweeps in alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.).

CABBAGE LOOPER (*Trichoplusia ni*) - ARIZONA - Larvae 300 per 100 sweeps in alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.).

ALFALFA CATERPILLAR (*Colias eurytheme*) - ARIZONA - Averaged 200 per 100 sweeps in alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.).

ALFALFA WEEVIL (*Hypera postica*) - OREGON - Adults 4 per 100 sweeps in alfalfa field near Lincoln, Polk County. (Westcott).

CLOVER LEAF WEEVIL (*Hypera punctata*) - OREGON - Adults active in alfalfa field near Lincoln, Polk County. (Westcott).

WEEVILS (*Sitona* spp.) - OREGON - *S. hispidulus*, *S. cylindricollis*, and *S. lineatus* adults active in alfalfa field near Lincoln, Polk County. (Westcott).

SUGARBEETS

GREEN PEACH APHID (Myzus persicae) - ARIZONA - Adults averaged 5 per plant in Pinal County. (Ariz. Coop. Sur.).

BET ARMYWORM (Spodoptera exigua) - ARIZONA - Larvae averaged 3 per plant at Casa Grande, Pinal County. (Ariz. Coop. Sur.).

COLE CROPS

CABBAGE APHID (Brevicoryne brassicae) - ALABAMA - Light to medium in collard gardens in Autauga, Chilton, Elmore, and Lee Counties; some aphids on almost every plant. Increasing on numerous plants; several hundred in "patches" found on more tender leaves. Predators and parasites less active during past 10 days of cold weather; some braconids noted. (McQueen). MARYLAND - Light on 20 acres of kale near Vienna, Dorchester County. (U. Md., Ent. Dept.).

GREEN PEACH APHID (Myzus persicae) - MARYLAND - Heavy on large garden planting of turnips at College Park, Prince Georges County. (U. Md., Ent. Dept.).

DIAMONDBACK MOTH (Plutella xylostella) - ALABAMA - All instars very heavy on one acre of collards in northern Autauga County; destroyed 25-50 percent of leaves. Larval feeding continues heavy within terminal buds in spite of controls. Egg laying continues despite freezing temperatures on some days. Adults averaged about 1-2 per row foot. (McQueen).

GENERAL VEGETABLES

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Continues main problem in lettuce in Pima, Pinal, Maricopa, and Yuma Counties; control difficult. (Ariz. Coop. Sur.).

GREEN PEACH APHID (Myzus persicae) - MARYLAND - Light but increasing on 400 acres of spinach and 100 acres of beets near Vienna, Dorchester County. (U. Md., Ent. Dept.). ARIZONA - A few colonies observed in lettuce at Yuma, Yuma County; no problem yet. (Ariz. Coop. Sur.).

LYGUS BUGS (Lygus spp.) - ARIZONA - Adults damaged some lettuce at Yuma, Yuma County. (Ariz. Coop. Sur.).

GREENHOUSE SLUG (Milax gagates) - CALIFORNIA - Medium in commercial lettuce plantings at Brentwood, Contra Costa County; leaf damage noted. (Cal. Coop. Rpt.).

DECIDUOUS FRUITS AND NUTS

PECAN WEEVIL (Curculio caryae) - ALABAMA - Larval damage to pecans more evident as harvest continues in several orchards in Covington and Bibb Counties. (Odom, Linder).

A SCARAB (Pleocoma crinita) - OREGON - Recent rains produced peak emergence in pear orchard at Hood River, Hood River County. Many males but few females found crawling on ground. (Peifer).

• WOOLLY APPLE APHID (Eriosoma lanigerum) - MARYLAND - Light to moderate on apple trees at Hancock, Washington County. Found on shoots of apple tree at Fairland, Prince Georges County; parasitism about 25 percent. (U. Md., Ent. Dept.).

CITRUS

Citrus Insect Situation in Florida - Mid-November - CITRUS RUST MITE (Phyllocoptura oleivora) infested leaves in 68 percent of groves (norm 69 percent); 43 percent economic (norm 53 percent). Infested fruit in 79 percent of groves (norm 72 percent); 58 percent economic (norm 54 percent). In high range on leaves and fruit. Fruit infestation above normal for November; leaf infestation slightly below. Slight increase expected. Highest districts west, south, and north. TEXAS CITRUS MITE (Eutetranychus banksi) infested 19 percent of groves (norm 27 percent); 4 percent economic (norm 11 percent). Below normal and in low range. Slight increase underway but very few heavy infestations expected. Highest district central. CITRUS RED MITE (Panonychus citri) infested 22 percent of groves (norm 34 percent); 4 percent economic (norm 9 percent). Below normal and in low range. At lowest November level in 17 years of record. Slight decrease expected. Highest district east. GLOVER SCALE (Lepidosaphes gloverii) infested 50 percent of groves (norm 69 percent); 3 percent economic (norm 14 percent). At lowest November level since 1961. Will remain below normal and in low range. Decrease expected. Highest districts west and east. PURPLE SCALE (L. beckii) infested 37 percent of groves (norm 65 percent); less than 1 percent economic (norm 5 percent). Increased from 17-year-record low of September 1968 but still lowest on record for November. Will be low and unimportant despite further expected increase. Highest district east. YELLOW SCALE (Aonidiella citrina) infested 44 percent of groves (norm 58 percent); less than 1 percent economic (norm 10 percent). Continued below normal and in low range. Decrease expected. Highest district east. BLACK SCALE (Saissetia oleae) infested 34 percent of groves (norm 32 percent); 10 percent economic (norm 10 percent). Will remain at current low level normal for November. Highest districts central and east. An ARMORED SCALE (Unaspis citri) infested 14 percent of groves; moderate or heavy in 2 percent. Slight increase expected in infested groves. WHITEFLIES expected to remain below normal and in moderate range. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Controls applied in nurseries at Yuma, Yuma County. (Ariz. Coop. Sur.).

COWPEA APHID (Aphis craccivora) - ARIZONA - Infested terminals at Yuma, Yuma County; no controls applied. (Ariz. Coop. Sur.).

CITRUS RED MITE (Panonychus citri) - ARIZONA - Increase begun in most groves at Yuma, Yuma County; cooler weather expected to control populations without treatment. (Ariz. Coop. Sur.).

OTHER TROP. & SUBTROP. FRUITS

OLIVE SCALE (Parlatoria oleae) - CALIFORNIA - Heavy in olive trees at Biggs, Butte County. (Cal. Coop. Rpt.).

SMALL FRUITS

RASPBERRY CROWN BORER (Bembecia marginata) - CALIFORNIA - Larvae heavy in nectar and blackberry canes at Crannell, Humboldt County. (Cal. Coop. Rpt.).

ORNAMENTALS

A GELECHIID MOTH (Coleotechnites thujaella) - MARYLAND - Heavily damaged a planting of arborvitae at Easton, Talbot County. Collected by C.W. McComb June 4, 1968. Determined by R.W. Hodges. This is a new State record. (U. Md., Ent. Dept.).

A WALSHIID MOTH (Periplocia nigra) - CALIFORNIA - Light on juniper at Fresno, Fresno County, and medium at Redding area, Shasta County. These are new county records. (Cal. Coop. Rpt.).

AN APHID (Euceraphis mucida) - MARYLAND - One specimen found at Monkton, Baltimore County. Collected by C.W. McComb October 4, 1965. Determined by F.W. Quednau. This is a new State record. (U. Md., Ent. Dept.).

AN ARMORED SCALE (Phenacaspis cockerelli) - FLORIDA - All stages severe on all 3 Chinese fanpalm (Livistona chinensis) in nursery at Keystone Heights, Clay County. (Collins, Oct. 28). This is a new Florida Department of Plant Industry host record. (Fla. Coop. Sur.).

FLORIDA RED SCALE (Chrysomphalus aonidum) - FLORIDA - All stages severely infesting 50 philodendrons in nursery at Lockhard, Orange County. (Mugrove, Sept. 13). This is a new Florida Department of Plant Industry host record. (Fla. Coop. Sur.).

WHITE PEACH SCALE (Pseudaulacaspis pentagona) - FLORIDA - Adults on Tetrapanax papyriferus in nursery at Crescent City, Putnam County. (Graham, Sept. 19). This is a new Florida Department of Plant Industry host record. (Fla. Coop. Sur.).

BULB MITE (Rhizoglyphus echinopus) - CALIFORNIA - Eggs, nymphs, and adults heavy on tulip bulbs in nursery at Auburn, Placer County. (Cal. Coop. Rpt.).

FOREST AND SHADE TREES

WESTERN PINE BEETLE (Dendroctonus brevicomis) - CALIFORNIA - Still active in ponderosa pine stands in high value recreational areas at Bass Lake area, Sierra National Forest. Damaging poles and young timber. Killed 70+ trees in 5 acres. (Downey, USFS). Killed 30+ ponderosa and sugar pines in 0.5-acre stand on adjacent private land at Grizzly Flats area, El Dorado County. Winter storm damage and road construction work apparent cause of outbreak. (Veirs, Gustafson, USFS).

PINE WEBWORM (Tetralopha robustella) - FLORIDA - Larvae scattered on 10,000 of 1,000,000 young slash pines at Brooker, Bradford County. (Collins et al., Oct. 29).

CALIFORNIA OAKWORM (Phryganidia californica) - CALIFORNIA - Defoliation heavy on crowns of oak trees in 1,000-acre stand on Rincon Grade, San Diego County. (Swain, Boozer, USFS).

BRONZE BIRCH BORER (Agrilus anxius) - MINNESOTA - Survey in progress last 2 weeks. Generally counts in nursery-grown birch trees remain about same as last year. Infested average of 2 percent of trees. State average increased by infestations up to 10 percent in isolated fields. (Minn. Ins. Rpt.).

CERAMBYCID BEETLES - TEXAS - Oncideres pustulatus caused much damage to mimosa trees at Houston, Harris County. (Young, Kay). Many Megacyllene robiniae adults on mesquite trees in Throckmorton County. (Lindsey, Boring).

GIANT BARK APHID (Longistigma caryae) - OKLAHOMA - Heavy on scattered post oak and blackjack oak trees in Oklahoma County. Ranged up to several hundred per cluster on small branches. (Okla. Coop. Sur.).

EUROPEAN ELM SCALE (*Gossyparia spuria*) - NEW MEXICO - Heavy on American elm at Santa Fe, Santa Fe County. (Heninger).

MAN AND ANIMALS

MOSQUITOES - CALIFORNIA - Problem increased rapidly past week: adult swarms very evident. Recent rains and moderate temperatures apparently triggered these last flights. Heavier than normal this past summer, particularly in rice-growing areas of Sacramento Valley. (Cal. Coop. Rpt.). TEXAS - *Culex pipiens quinquefasciatus* present throughout Jefferson County: apparently increased with cooler temperatures. *C. salinarius* dominant in Pleasure Island and Port Arthur areas. High of 500 per trap night on October 7. *Aedes sollicitans* numerous last 10 days of October. *A. vexans* in all traps. *Psorophora ciliata* only in Port Arthur area. *Mansonia perturbans* taken throughout first half of October: majority from Pleasure Island area. *Uranotaenia* sp. still common: *U. lowii* and *U. sapphirina* in about equal numbers. *Anopheles crucians* very numerous: high of 54 in one trap night on Pleasure Island. Several specimens from north Beaumont. *A. quadrimaculatus* in Pleasure Island and north Beaumont traps. (Jefferson County Mosq. Cont. Dist., Oct. Rpt.).

SCREW-WORM (*Cochliomyia hominivorax*) - Total of 150 cases reported in U.S. November 17-23 as follows: TEXAS - Atascosa 12, Bandera 2, Bee 5, Bexar 1, Brooks 6, Calhoun 1, De Witt 2, Dickens 1, Dimmit 8, Duval 4, Frio 11, Goliad 1, Guadalupe 2, Hidalgo 7, Hudspeth 1, Jeff Davis 1, Jim Hogg 2, Jim Wells 8, Karnes 3, Kenedy 1, Kinney 6, Kleberg 1, La Salle 3, Live Oak 1, Maverick 3, Medina 5, McMullen 1, Nueces 2, Pecos 1, Presidio 1, Real 1, Refugio 2, Starr 3, Uvalde 3, Val Verde 3, Webb 11, Willacy 1, Wilson 10, Zapata 3, Zavala 4; ARIZONA - Graham 1, Maricopa 3; CALIFORNIA - San Luis Obispo 2. Total of 377 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Baja California 3, Territorio sur de Baja California 110, Sonora 103, Chihuahua 38, Coahuila 74, Nuevo Leon 23, Tamaulipas 26. Total of 16 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 62,914,000; Arizona 6,300,000; California 1,800,000; Mexico 99,474,000. (Anim. Health Div.).

STABLE FLY (*Stomoxys calcitrans*) - OKLAHOMA - Ranged 5-6 per head on cattle checked in Payne and Noble Counties. (Okla. Coop. Sur.).

HORN FLY (*Haematobia irritans*) - MISSISSIPPI - Very light on Oktibbeha County cattle; adults about 4-5 per head. (Combs).

CATTLE LICE - IOWA - No large increase noted during survey of several central area cattle. (Iowa Ins. Sur.). MISSISSIPPI - *Linognathus vituli* moderate on Oktibbeha County cattle. (Combs).

HOG LOUSE (*Haematopinus suis*) - MISSISSIPPI - Heavy on hogs at Clay County sale barn. (Combs).

WINTER TICK (*Dermacentor albipictus*) - OKLAHOMA - Very heavy on cattle at Ft. Reno area, Canadian County. (Okla. Coop. Sur.).

NORTHERN FOWL MITE (*Ornithonyssus sylviarum*) - NEW MEXICO - Heavy at poultry farm at Las Cruces area, Dona Ana County. (Durkin).

BROWN RECLUSE SPIDER (*Loxosceles reclusa*) - IOWA - Negative at one area of Des Moines, Polk County. (Iowa Ins. Sur.).

STORED PRODUCTS

FLAT GRAIN BEETLE (Cryptolestes pusillus) - FLORIDA - Adults infesting large quantities of Argentine Bahia grass seed (Paspalum notatum var. saurae) in seed warehouses at Orlando, Orange County; Bartow, Polk County; and Dade City, Hernando County. Determined by J. Strayer. Seeds fumigated and dusted with insecticide. Fumigation included railroad boxcar of seed. (Fla. Coop. Sur., Nov. 5).

BENEFICIAL INSECTS

CONVERGENT LADY BEETLE (Hippodamia convergens) - ALABAMA - Adults 1-2 per corn-stalk on about 5-10 percent of stalks examined in 2 Autauga County fields. Numerous and feeding on aphids on pine and on scales on oak in Lee County. (McQueen).

AN ICHNEUMON WASP (Melanichneumon brevicinctus) - WISCONSIN - Remains active; specimens from as far north as La Crosse and Sturgeon Bay reared from Manduca spp. (hornworms). (Wis. Ins. Sur.).

HYMENOPTEROUS PARASITES - ARKANSAS - Only these beneficial insects in northwest area. Light, 5-10 per 100 sweeps, in cereal and forage crops. (Boyer).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

A SEED CHALCID (Megastigmus pistaciae) - CALIFORNIA - Negative during inspections and in stickyboard traps in Butte, Stanislaus, and Tulare Counties during October. (PPC West. Reg.).

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Additional traps installed in El Paso area. All traps in Presidio removed. Two infestations found; all other inspections negative for area. Two applications applied to 20 infested acres at El Paso. In High Plains area, field surveys continued in conjunction with control program; acreage with low populations removed from treatment schedule. Some slight spread to west in Dawson County; very heavy at one location in Borden County. Treatments in control zone completed October 29 on 207,126 aggregate acres in Units I and II and October 26 on 99,696 aggregate acres in Unit IV. One application applied to about 1,750 acres in Borden County, below the Caprock. (PPC South. Reg.).

CITRUS BLACKFLY (Aleurocanthus woglumi) - TEXAS - Inspections negative in Bee, Cameron, Hidalgo, and Zapata Counties. (PPC South. Reg., Oct. Rpt.).

GOLDEN NEMATODE (Heterodera rostochiensis) - WEST VIRGINIA - Collected 101 soil samples from 75 acres of potato fields in Nicholas County; 25 more acres to be sampled. VIRGINIA - Collected and processed 1,264 samples from 24 properties on Eastern Shore to date; results negative. DELAWARE - Survey began October 14 in northern area; collected 1,518 samples from 1,149 acres by end of October. NEW JERSEY - Soil sampling completed; collected 1,832 samples from 4,312 acres. Of these, 434 samples were from 3 farms known to have used seed from Steuben County, New York. PENNSYLVANIA - By end of October, collected 334 samples from about 1,606 acres in Crawford and Erie Counties and 348 samples from about 1,740 acres in Potter County. NEW YORK - Survey of upstate tablestock potato land continues; collected 22,102 samples from 15,518 acres; processing of postfumigation samples begun. On Long Island 21,798 samples collected from 9,323 acres; processing of postfumigation samples completed; one viable cyst recovered; survey of exposed fields will be completed first week of November. To date, 3 fields infested; 2 of 3 recovered cysts viable. RHODE ISLAND - Sampling completed; processing underway. MASSACHUSETTS - Processing of 212 samples from 1,839 acres completed October 16; results negative. MAINE - Collected 5,000 samples from about 25,000 acres on 4 farms in Aroostook County;

farms had received seed stock for 1967 season from infested farms in Steuben County, New York. (PPC East. Reg.).

GYPSY MOTH (*Porthetria dispar*) - NEW JERSEY - Intensive egg mass scouting of positive trap sites begun in Southern area. Found 5 egg masses at 2 Cape May County locations; had not been confirmed during preliminary scouting. Infested 10 acres in Evesham Township, Burlington County; all traps within 3 miles negative this year. (PPC East. Reg., Oct. Rpt.).

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - NORTH CAROLINA - Aerial treatment of 35,570 acres completed in Carteret, Craven, Columbus, and Onslow Counties. All known infested areas now treated in these counties. SOUTH CAROLINA - Several extensions noted during survey of Dillon, Lexington, Horry, and Richland Counties. First application to 55,000 acres completed October 29 in Clarendon County. FLORIDA - Small extensions found outside treatment blocks in Polk and Osceola Counties in Tampa area, in Volusia and Seminole Counties in Orlando area, and in Desoto, Highlands, Charlotte, Marion, and Baker Counties. Aerially treated 57,000 acres in Calhoun, Jackson, Gadsden, Liberty, and Washington Counties. Treated 276,551 acres (2 blocks) in Tampa eradication area during October. ALABAMA - Infested new areas in Cullman and Marshall Counties; significant extensions noted in Blount, Cleburne, Randolph, St. Clair, and Walker Counties. Initially treated 8,797 acres in 9 counties. MISSISSIPPI - Mounds found in treated areas of Lee, Monroe, Covington, and Jefferson Davis Counties. Treatment completed November 1 on 409,600-acre test block in Clay, Lowndes, and Oktibbeha Counties. TEXAS - Fourth application made to about 37,662 acres in Gregg County, the second to 5,000 acres in Harrison County, and the first to another area in Harrison County. (PPC South. Reg.).

JAPANESE BEETLE (*Popillia japonica*) - MICHIGAN - Aerial treatment of 4,225 acres and ground treatment of about 300-400 acres completed October 25 in Berrien County. (PPC Cent. Reg.).

MEXICAN FRUIT FLY (*Anastrepha ludens*) - TEXAS - More than 1,700 traps placed in 14 southern counties in October; about 6,000 traps serviced. Female trapped October 10 near McAllen affected about 475 acres of citrus. This is earliest catch since 1949-50 season. (PPC South. Reg.). CALIFORNIA - Sterile adults trapped for 19 consecutive weeks. Collected 25 past week at San Ysidro and National City, San Diego County; total for season is 334 at 62 trap locations. (Cal. Coop. Rpt.).

PINK BOLLWORM (*Pectinophora gossypiella*) - LOUISIANA - Moths recovered from sex lure traps in regulated areas of Avoyelles, Caddo, Grant, Natchitoches, Rapides, and Red River Parishes. Two larvae recovered in lint cleaner in Caddo Parish. ARKANSAS - About 350 sex lure traps operated during October; 2 moths taken in Miller County. One larva collected in gin trash in Cleburne County. Negative during lint cleaner inspections in State. TEXAS - Several initial infestations for this season in various areas of State. Still no heavily infested areas. Six moths taken in sex lure traps in Harrison County. OKLAHOMA - Larvae recovered during lint cleaner inspections in Bryan, Cotton, Love, Marshall, and Tillman Counties. (PPC South. Reg.). Less numerous than in 1967 in lint cleaners in Cotton, Tillman, and Jefferson Counties. (Okla. Coop. Sur.). ARIZONA - Increased 30 percent in lint cleaners at Yuma, Yuma County; larvae 30-40 per lint cleaner. (Ariz. Coop. Sur.). CALIFORNIA - Second baiting of sex lure traps with hexalure completed north of Kern County and continuing in Kern County. (PPC West. Reg., Oct. Rpt.). No wild moths taken in Bakersfield area in 1968; 8.5+ million sterile moths released to date. (Cal. Coop. Rpt.).

SWEETPOTATO WEEVIL (*Cylas formicarius elegantulus*) - LOUISIANA - Infested small areas at Gilbert and Waynesboro, Franklin Parish; at Oakdale, Allen Parish; and at 2 locations in Sabine Parish. Collected 2,142 weevils in uncoated trap and 198 in trap coated with stickem during October (9 nights) in St. Landry Parish.

ALABAMA - Infested new properties in 6 counties during October. GEORGIA - Infested 2 new properties at Albany, Dougherty County. New infestation found in southern Grady County; collected 145 weevils in 2 traps during October in this county. (PPC South, Reg.).

TOBACCO CYST NEMATODE (Heterodera tabacum) - MASSACHUSETTS - Processing of 262 soil samples from 203 acres of shade tobacco completed October 15. Determined by I. Granek. Infested 7 out of 31 fields surveyed. Controls to be applied. (PPC East. Reg.).

WHITE-FRINGED BEETLES (Graphognathus spp.) - GEORGIA - Extensions found in Ben Hill, Wheeler, and Wilcox Counties. ALABAMA - Additional 4,200 acres infested during delimiting survey of known infested areas in 19 counties. TENNESSEE - New infestations found at Atwood, Carroll County; at Taft, Lincoln County; and at Waynesboro, Wayne County. Extensions noted in Bradley, Davidson, and Wayne Counties. (PPC South, Reg., Oct. Rpt.). VIRGINIA - Additional adult finds at independent cities of Newport News and Virginia Beach in October. (PPC East. Reg.). G. leucoloma striatus adults light on wild aster near Williamsburg in James City and York Counties November 7 and in the independent city of Williamsburg November 15. Determined by R.E. Warner. These are new county records. (PPC).

WOOLLY WHITEFLY (Aleurothrixus floccosus) - CALIFORNIA - Amitus sp. (a platygasterid wasp) and Eretmocerus sp. (a eulophid wasp) now established at Sunnyside area, San Diego County, where liberated in 1967. Colonies of A. floccosus difficult to find in this untreated area; may indicate parasitism effectively suppressing population. No recoveries in other parts of infested area where Amitus sp. and Eretmocerus sp. released. Added 21 A. floccosus infested blocks to known infested area out of 33 inspected during delimiting survey. Infestations still light in 10 out of 11 previously treated blocks. More infested properties noted during third posttreatment inspection of 50 randomly selected blocks. (Cal. Coop. Rpt.).

INSECT DETECTION

New State Records

A GELECHIID MOTH (Coleotechnites thujaella) - MARYLAND - On arborvitae at Easton, Talbot County. Collected by C.W. McComb June 4, 1968. Determined by R.W. Hodges. (p. 1087).

AN APHID (Euceraphis mucida) - MARYLAND - Found at Monkton, Baltimore County. Collected by C.W. McComb October 4, 1965. Determined by F.W. Quednau. (p. 1087).

New County and Island Records

A WALSHIID MOTH (Periploca nigra) - CALIFORNIA - Fresno and Shasta Counties. (p. 1087).

A WHITE-FRINGED BEETLE (Graphognathus leucoloma striatus) - VIRGINIA - James City and York Counties, and City of Williamsburg. (p. 1091).

BEAN FLY (Melanagromyza phaseoli) - HAWAII - Hawaii Island. (p. 1092).

HAWAII INSECT REPORT

General Vegetables - BEAN FLY (*Melanagromyza phaseoli*) found on snap beans on Hawaii Island for a new island record. Larvae and pupae heavy on dying seedlings at Kohala and older plantings at Pepekeo. All stages heavy in small backyard snap bean plantings at Pukalani, Maui. Generally light in all commercial snap and yard-long beans on Oahu. (Nakano et al.). CABBAGE LOOPER (*Trichoplusia ni*) eggs and larvae heavy on lettuce in Pulehu, Maui, at 2,100 feet elevation. Damage heavy on lettuce starting to head. (Hori, Miyahira). Adults of LEAF MINER FLIES (*Liriomyza* spp.) heavy in snap bean field at Pulehu, Maui; in cucumbers and snap beans at Hanalei, Kauai; and in yard-long and snap beans at Waianae and Waimanalo, Oahu. Larval mines trace to light in all areas. (Miyahira et al.).

Fruit Trees - RED-BANDED THRIPS (*Selenothrips rubrocinctus*) nymphs and adults heavy on foliage of backyard mango trees at Lahaina and Wailuku, Maui. (Ah Sam).

Coffee - A BARK BEETLE (*Xylosandrus compactus*) widespread in wild coffee plants at Wailuku (Iao Valley), Maui, at 400 feet elevation. Numerous larvae, pupae, adults, and exit holes in twigs and branches. (Miyahira, Ah Sam).

Ornamentals - PACIFIC BEETLE COCKROACH (*Diploptera punctata*) nymphs and adults heavy on many spider lily plants at Sunset Beach, Oahu; congregating in terminal leaves. (Funasaki).

Beneficial Insects - SMALLER LANTANA BUTTERFLY (*Strymon bazochii gundlachianus*) adults numerous in dense growths of lantana (1.5 acres) at Laie Point, Oahu. (Suzukawa).

Miscellaneous Insects - Nymphs and adults of a RHOPALID BUG (*Jadera haematoloma*) continue to increase on many scattered growths of balloonvine on Oahu; up to 20 per fruit at Pearl City, Ewa, and Waianae. VAGRANT GRASSHOPPER (*Schistocerca vaga*) remains heavy at Waianae, Oahu. Sightings common in weed growths around farming areas. Occasionally flushed from crops during spray or harvesting operations. Damage negligible. RED-SHOULDERED STINK BUG (*Thyanta acceera*) remains light and widespread on grasses from Sand Island to Makaha, Oahu. Several adults on swollen fingergrass in farms at Waianae. (Funasaki).

LIGHT TRAP COLLECTIONS

FLORIDA - Gainesville - 11/15-21, BL - Beet armyworm (*Spodoptera exigua*) 2, black cutworm (*Agrotis ipsilon*) 4, corn earworm (*Heliothis zea*) 2, yellow-striped armyworm (*Prodenia ornithogalli*) 1. Monticello - 11/18-20, BL - Armyworm (*Pseudaletia unipuncta*) 11, black cutworm 32, cabbage looper (*Trichoplusia ni*) 7, corn earworm 11, tobacco hornworm (*Manduca sexta*) 1, tomato hornworm (*M. quinquemaculata*) 1, variegated cutworm (*Peridroma saucia*) 13, yellow-striped armyworm 17. MISSISSIPPI - Stoneville - 11/16-22, BL, 32-72 F., precip. 1.84 - Armyworm 19, beet armyworm 21, black cutworm 86, fall armyworm (*S. frugiperda*) 55, granulate cutworm (*Feltia subterranea*) 13, yellow-striped armyworm 1. TEXAS - Waco - 11/16-22, BL - Armyworm 40, beet armyworm 26, black cutworm 4, fall armyworm 1, granulate cutworm 36, variegated cutworm 11.

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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Survey and Detection Operations
Plant Pest Control Division
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Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT**HIGHLIGHTS**Current Conditions

GREENBUG remains economic on wheat in Scotts Bluff and Banner Counties, Nebraska; aerial treatments continued on small grain in western South Dakota. (p. 1095).

CORN ROOTWORM survey indicates most economic infestations expected on corn in southern Minnesota in 1969. (p. 1095).

BERMUDAGRASS MITE adults heavy in Bermuda grass in Orange County, California. (p. 1096).

CALIFORNIA RED SCALE heavy on citrus in sections of Sonoma, Glenn, and Sacramento Counties, California. (p. 1098).

Total of 144 SCREW-WORM cases reported in southwest U.S. November 24-30. (p. 1099).

Detection

TUBER FLEA BEETLE reported for first time in California. (p. 1097).

For new county and island records see page 1102.

Special Reports

Survey Methods. Selected References 1954. Part XIV. (pp. 1103-1106).

Forage Crop Insects in Massachusetts in 1968. (p. 1107).

Distribution of Pea Leaf Weevil (map). (p. 1108).

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WEATHER BUREAU'S 30-DAY OUTLOOK

DECEMBER 1968

The Weather Bureau's 30-day outlook calls for temperatures to average below seasonal normals over the southern half of the Nation lying west of the Mississippi, and also over New England. Above normal temperatures are expected for the Ohio Valley and Southeast. In unspecified areas near normal averages are indicated. Precipitation is predicted to exceed normal over a broad area extending from the southern Plateau through the central Plains, Ohio Valley, eastern Great Lakes, and Northeast. Subnormal precipitation is predicted for the West Coast, the northern Plains, and Florida. Elsewhere near normal amounts are in prospect.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$5.00 a year.

WEATHER OF THE WEEK ENDING DECEMBER 2

HIGHLIGHTS: Winter storms struck the Rocky Mountains and most northern States. A few tornadoes occurred in the South. Temperatures in the Rockies plunged far below zero.

PRECIPITATION: Generous rains fell along the Pacific coast and nearby inland valleys while snow fell above about 4,000 feet in the Cascades and about 6,000 feet in the southern Sierras. Snow is now 36 to 48 inches deep above 3,000 feet in the Cascades. Light snow fell across the northern Great Plains early in the week and moderate to heavy snow fell in the Rocky Mountains on several days during the week and over the weekend. Seven inches of snow fell at El Paso, Texas, Tuesday evening and Wednesday morning. Snow depths reached 2 to 6 inches in the mountains in Arizona and about one foot at Cloudercroft Ranger Station, New Mexico. By the weekend the snow belt had extended from the Rocky Mountains across the northern and central Great Plains to northern New England. Along the southern edge of the snow belt freezing rain mixed with the snow slicked the highways making automobile travel hazardous. Weather of the week continued on page 1102.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (*Pseudaletia unipuncta*) - MICHIGAN - Adults still flying at Livingston County blacklight station; 9 moths collected November 24-25. (Janes).

CORN LEAF APHID (*Rhopalosiphum maidis*) - OKLAHOMA - Averaged 20 per linear foot of Coal County oats. (Okla. Coop. Sur.). ARIZONA - Light in most barley fields in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

GREENBUG (*Schizaphis graminum*) - NEW MEXICO - Generally light, 0-6 per row foot, on wheat at San Jon, Quay County. (Mathews). OKLAHOMA - Ranged up to 150 (average 20) per linear foot in 3 sandy land wheatfields in Cleo Springs area of Major County; damage noted in heaviest infested spots. Counts per row foot ranged 40-50 in Muskogee County field, 6-50 in 3 Washita County fields, 10-40 in Ellis County, and 10-15 in Tillman County. (Okla. Coop. Sur.). MISSOURI - Ranged up to 16 per row foot on early planted wheat in Boone and Callaway Counties. (Munson). NEBRASKA - Remains economic, 10-30 per plant, on wheat in Scotts Bluff and Banner Counties. (Hagen). SOUTH DAKOTA - Aerial treatment on small grain continued during warm weather November 16-22 in western area. (Jones). MARYLAND - Heavy on 30 acres of rye cover crop near Stockton, Worcester County. (U. Md., Ent. Dept.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - OKLAHOMA - Averaged 100 per 10 sweeps of Hughes County alfalfa. (Okla. Coop. Sur.).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - SOUTH DAKOTA - Larvae increased markedly on corn in Hamlin and Lake Counties and decreased in Brown County compared with 1967 during fall abundance survey of 10 eastern counties November 18-22. Plant infestations ranged from 4-56 percent in Codington County to 68-100 percent in Hamlin County. Larvae per 100 stalks ranged from 4-98 (average 35) in Miner County to 238-550 (average 327.3) in Hamlin County. (Jones). MINNESOTA - Fall abundance survey conducted in 7 districts in southern two-thirds of State. Larvae per 100 corn plants by district: Southwest 35, south-central 38, southeast 32, west-central 58, central 22, east-central 11, and northwest 99. State average 42. (Minn. Ins. Rpt.).

CORN ROOTWORMS (*Diabrotica* spp.) - MINNESOTA - *D. longicornis* and *D. virgifera* major corn insects in 1968. Adult average per acre by district: Southeast 25,925; southwest 23,728; south-central 13,957; central 13,572; east-central 8,714; west-central 5,377. Counts economic or high generally in southern counties of districts. Generally increased in about half of counties surveyed. *D. virgifera* percentages lower in 4 of above districts; increased in west-central district; unchanged in east-central district. *D. longicornis* remains dominant. Problems remain in fields where corn follows corn. Most of economic infestations in 1969 will be in southeast and southwest districts and to lesser extent in south-central and central districts. Problems will be fewer and widely scattered in west-central and east-central districts. (Minn. Ins. Rpt.).

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - OKLAHOMA - Present in 50 percent of cornstalks checked in Hughes County and in 33 percent of stalks in Coal County. (Okla. Coop. Sur.).

SMALL GRAINS

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - ALABAMA - Nearly all larvae below ground line dead in rye and other small grain fields after cold temperatures in Houston County. Damaging numbers to small grains in southeast area should be ended. (Roney).

TURF, PASTURES, RANGELAND

A BILLBUG (*Sphenophorus venatus vestitus*) - CALIFORNIA - Medium in hybrid Bermuda grass in nursery at Bellflower and heavy in tifgreen Bermuda grass in golf course at Pasadena, Los Angeles County. Found on Bermuda grass at Huntington Beach and Fullerton, Orange County, for a new county record. (Cal. Coop. Rpt.).

A MARCH FLY (*Dilophus orbatus*) - CALIFORNIA - Populations continuing in many locations statewide. Heavy in turf at Oakland, Alameda County, and in lawns of nursery at Concord, Contra Costa County; medium in lawn grass at Modesto, Stanislaus County. (Cal. Coop. Rpt.).

RHODES-GRASS SCALE (*Antonina graminis*) - CALIFORNIA - Adults medium on Bermuda grass in nursery at San Diego, San Diego County. (Cal. Coop. Rpt.).

BERMUDAGRASS MITE (*Aceria neocynodonis*) - CALIFORNIA - Adults heavy in Bermuda grass at Irvine, Orange County. (Cal. Coop. Rpt.).

FORAGE LEGUMES

ALFALFA WEEVIL (*Hypera postica*) - WISCONSIN - Adult collected in alfalfa October 23 near North Leeds, Columbia County, for a new county record. Common in some fields at Kenosha, Kenosha County. (Wis. Ins. Sur.). MISSISSIPPI - No larvae in 4 one-square-foot samples on Oktibbeha County alfalfa. (Dinkins). UTAH - Adults 1-5 per 0.5 pound of juniper duff in Logan Green Canyon, Cache County, 1-2 miles from nearest alfalfa field. (Knowlton, Nov. 26).

A JAPANESE WEEVIL (*Calomycterus setarius*) - MISSOURI - Collected on red clover in Platte County by L.P. Burgess October 31. This is a new county record. (Munson).

PEA APHID (*Acyrtosiphon pisum*) - MISSISSIPPI - Light on 10 acres of Oktibbeha County clover; winged and wingless adults observed. (Dinkins). NEW MEXICO - Light on alfalfa in Bernalillo, Chaves, and Dona Ana Counties. (N.M. Coop. Rpt.).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Adults 250 per 100 sweeps in alfalfa on east side of Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Averaged 150 per 100 sweeps in alfalfa on east side of Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

SUGARBEETS

BET ARMYWORM (*Spodoptera exigua*) - ARIZONA - Larvae averaged 3 per plant in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

GREEN PEACH APHID (*Myzus persicae*) - ARIZONA - Moderate in some fields in Salt River Valley, Maricopa County; heavy on ends in many fields. (Ariz. Coop. Sur.).

POTATOES, TOMATOES, PEPPERS

SAP BEETLES (*Carpophilus* spp.) - CALIFORNIA - Larvae and adults of *C. mutilatus* and *C. humeralis* medium in tomatoes at Fresno, Fresno County. (Cal. Coop. Rpt.).

BEANS AND PEAS

TUBER FLEA BEETLE (Epitrix tuberis) - CALIFORNIA - Collected on beans at Fort Jones, Siskiyou County, by R.S. Richards and R.P. Allen June 6, 1968. Determined by T.N. Seeno and confirmed by L.G. Gentner. This is a new State record. (Cal. Coop. Rpt.).

COLE CROPS

APHIDS - ALABAMA - Brevicoryne brassicae (cabbage aphid) increase continues on collards and cabbages as cooler weather approaches; noticeable in gardens in Lee and Tallapoosa Counties. Pemphigus populitransversus (poplar petiole gall aphid) continues medium to heavy on turnip roots; noticeable in gardens near Millerville, Clay County. Hyadaphis pseudobrassicae (turnip aphid) light, increasing on turnips in gardens in Lee, Clay, Tallapoosa, Chilton, Autauga, and other counties. (Barwood et al.).

DECIDUOUS FRUITS AND NUTS

MEALY PLUM APHID (Hyalopterus pruni) - CALIFORNIA - Nymphs and adults heavy on plum nursery stock at Cordelia, Solano County, infestation unusually late. (Cal. Coop. Rpt.).

APPLE MAGGOT (Rhagoletis pomonella) - WISCONSIN - Collected on sticky trap in apple tree in September at Shawano, Shawano County. Determined by G. Steyskal. This is a new county record. (PPC).

PECAN WEEVIL (Curculio caryae) - OKLAHOMA - Destroyed 90 percent of pecan crop checked in Mayes County. (Okla. Coop. Sur.).

HICKORY SHUCKWORM (Laspeyresia caryana) - OKLAHOMA - Present in 90 percent of Mayes County pecans. (Okla. Coop. Sur.).

CODLING MOTH (Carpocapsa pomonella) - NEW MEXICO - Collected 2 larvae from pecan shucks in Dona Ana County. (Campbell). This is a new host record. (N.M. Coop. Rpt.).

WALNUT SCALE (Aspidiotus juglansregiae) - CALIFORNIA - Medium to heavy and spotty on walnut trees at Merced, Merced County. Importance increasing in few walnut-growing areas of San Joaquin Valley. (Cal. Coop. Rpt.).

CITRUS

CALIFORNIA RED SCALE (*Aonidiella aurantii*) - CALIFORNIA - Increased to epidemic levels at Cloverdale, Sonoma County, during summer. Heavy infestation now covers 15 city blocks and small citrus acreage. Suppression treatment planned this winter and late spring. No previous infestations in area. Favorable weather and few parasites and predators cause of unusual behavior of *A. aurantii* in widely separated areas of State. Now heavy on navel oranges at Willows, Glenn County, and at Sacramento, Sacramento County; twig mortality heavy. (Cal. Coop. Rpt.).

A KATYDID (*Scudderia mexicana*) - ARIZONA - Rind feeding injury on mature navel orange fruit noted on trees and at packing facility; injured fruit from east side of Salt River Valley, Maricopa County. Groves apparently not treated in time. Determined by A.B. Gurney. (Ariz. Coop. Sur.).

CITRUS THRIPS (*Scirtothrips citri*) - ARIZONA - Injured ripe fruit very little in Salt River Valley, Maricopa County: well-timed prebloom and postbloom sprays used by most growers. (Ariz. Coop. Sur.).

CITRUS FLAT MITE (*Brevipalpus lewisi*) - CALIFORNIA - Adults heavy on tangelos and other citrus at Bard, Imperial County. (Cal. Coop. Rpt.).

SMALL FRUITS

A TISCHERIID MOTH (*Tischeria aenea*) - FLORIDA - Larvae moderate on blackberry leaves at Lake Placid, Highlands County, November 6. (Barker). This is a new Florida Department of Plant Industry county record. (Fla. Coop. Sur.).

ORNAMENTALS

A WEEVIL (*Nemocestes incomptus*) - CALIFORNIA - Adults heavy in rhododendron nursery stock at Fort Bragg, Mendocino County. (Cal. Coop. Rpt.).

A SAP BEETLE (*Conotelus mexicanus*) - CALIFORNIA - Found in rose at Orosi, Tulare County, for a new county record. (Cal. Coop. Rpt.).

FOREST AND SHADE TREES

NANTUCKET PINE TIP MOTH (*Rhyacionia frustrana*) - VIRGINIA - Damage heavy to young loblolly pine throughout Hanover County. Severe on loblolly pine at location in Alleghany County. None at 2 plantations in Rockingham County. (For. Pest Sur., Oct. Rpt.).

ENGRAVER BEETLES (*Ips* spp.) - VIRGINIA - Killed 20 loblolly pines at Accomack County location and 3-4 trees in each of 3 Caroline County locations. (For. Pest Sur., Oct. Rpt.).

AN EPIPASCHIID MOTH (*Tetralopha asperatella*) - MARYLAND - Collected by W. Allen and R. Davis from oak near Sudlersville, Queen Annes County, July 11. Determined by C.W. McComb. This is a new county record. (U. Md., Ent. Dept.).

FALL CANKERWORM (*Alsophila pometaria*) - MICHIGAN - Males abundant at Livingston County blacklight station November 24-25. Females on tree trunks and farm out-buildings during day. (Janes).

MAN AND ANIMALS

SCREW-WORM (*Cochliomyia hominivorax*) - Total of 144 cases reported in U.S. November 24-30 as follows: TEXAS - Atascosa 10, Bandera 1, Bee 4, Bexar 2, Brooks 2, Dimmit 15, Duval 3, Frio 18, Hidalgo 5, Jim Hogg 2, Jim Wells 4, Kenedy 2, Kinney 4, Kleberg 1, La Salle 3, Live Oak 1, Maverick 12, Medina 8, McMullen 1, Pecos 1, Presidio 1, San Patricio 1, Starr 9, Uvalde 3, Val Verde 5, Webb 10, Willacy 1, Zapata 3, Zavala 4; ARIZONA - Maricopa 4, Pinal 1, Yavapai 1; CALIFORNIA - Imperial 1, Riverside 1. Total of 488 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Baja California 4, Territorio sur de Baja California 99, Sonora 122, Chihuahua 84, Coahuila 70, Nuevo Leon 55, Tamaulipas 54. Total of 27 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 76,568,000; Arizona 4,000,000; California 1,900,000; Mexico 83,840,000. (Anim. Health Div.).

COMMON CATTLE GRUB (*Hypoderma lineatum*) - OKLAHOMA - Ranged up to 9 (average 2) per animal on cattle checked in Payne County. (Okla. Coop. Sur.). ARKANSAS - Activity apparently later and lighter than normal in northwest area. No larvae in 77 head in Washington County and 103 head in Benton County week of November 18. (Simco).

A NOSE BOT FLY (*Cephenemyia jellisoni*) - OKLAHOMA - Mostly second instars ranged 50-60 per head in deer checked in Cherokee County; some first instars noted. (Okla. Coop. Sur.).

HORN FLY (*Haematobia irritans*) - MISSISSIPPI - Adults about 3-5 per head on 15 Oktibbeha County cattle. (Dinkins).

HARD-BACKED TICKS - OKLAHOMA - *Ixodes scapularis* (black-legged tick) 94 percent of population on deer in Cherokee County. *Dermacentor albipictus* (winter tick) and *Amblyomma americanum* (lone star tick) light in this county. Apparently lighter than in 1967. (Okla. Coop. Sur.).

NORTHERN FOWL MITE (*Ornithonyssus sylviarum*) - ARKANSAS - Infestations spotty as usual in State. Treatment required week of November 18 on flock in Washington County; absent in most flocks. (Simco).

HOUSEHOLDS AND STRUCTURES

GERMAN COCKROACH (*Blattella germanica*) - ALABAMA - This and other cockroaches heavy in Lee County store and in late October in Monroe County store; many holes eaten into potatoes on sales counters. Egg capsules at one store averaged about one per square foot on walls and 5-15 per square foot around door and window facings. Nymphs abundant. (Barwood et al.).

STORED PRODUCTS

VETCH BRUCHID (*Bruchus brachialis*) - WASHINGTON - Destroyed several tons of stored vetch seed during early October in nursery near Bellingham, Skagit County. This is first known infestation for this area in western part of State. Determination verified by M.H. Hatch. (Holland, Eide).

RED FLOUR BEETLE (*Tribolium castaneum*) - CALIFORNIA - This species, *Lasioderma serricorne* (cigarette beetle), and *Plodia interpunctella* (Indian-meal moth) unusually prevalent in households in State. (Cal. Coop. Rpt.).

BENEFICIAL INSECTS

GREEN LACEWINGS (*Chrysopa* spp.) - ARIZONA - Averaged 40 per 100 sweeps of alfalfa in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).
MISSISSIPPI - *C. oculata* adults 5 per 50 sweeps of Oktibbeha County alfalfa. (Dinkins).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

CITRUS BLACKFLY (*Aleurocanthus woglumi*) - MEXICO - Biological Control Zone - Inspected 22,268 trees on 359 acres in 4 municipios of Tamaulipas; 647 trees on 15 acres found infested. Chemical Control Zone - Inspected 34,427 trees on 491 acres in 9 municipios in Nuevo Leon and in 6 municipios in Tamaulipas; 373 trees on 393 acres found infested at Linares and Montemorelos, Nuevo Leon. Sprayed aggregate of 39,497 trees at Linares, Hualahuises, and Montemorelos. Inspections negative on 417 trees on 80 properties at Hermosillo and on 19 trees on 10 properties at Tijuana. (PPC Mex. Reg., Oct. Rpt.).

GRASSHOPPERS - MINNESOTA - Lighter in all areas surveyed in 1968; wet weather during and after hatch caused decline. Economic infestations of moderate to abundant expected to be dispersed on alfalfa and along roadsides and ditchbanks throughout west-central, central, and east-central districts in 1969. *Melanoplus femurrubrum* expected to be predominant statewide. *Chorthippus curtipennis* increasing last few years in western area; may be problem in grassy areas and fields. (Minn. Ins. Rpt.).

MEXICAN FRUIT FLY (*Anastrepha ludens*) - MEXICO - Collected 3,228 sterile males and 6,005 sterile females in 350 traps at Tijuana, Baja California; 263 sterile males and 312 sterile females in 150 traps at Ensenada; and 2 sterile flies in 60 traps at Tecate. Caught 10 wild males and 8 wild females in 50 traps at La Paz, Territorio sur de Baja California, and 4 wild males and one wild female in 17 traps at Delegación Villa Constitución. Negative in 291 traps at San Jose del Cabo, in 12 traps at Delegación Todos Santos, and in 12 traps at Pescadero. Released aggregates of 3,596,276 pupae (5 releases) at Tijuana, Baja California; 663,724 pupae (4 releases) at Ensenada; and 2,850,000 pupae (5 releases) at La Paz. Average percent emergence was 81.5 at Tijuana, 78.4 at Ensenada, and 76.4 at La Paz. (PPC Mex. Reg., Oct. Rpt.).

PINK BOLLWORM (*Pectinophora gossypiella*) - NEW MEXICO - Light in most lint cleaners in Roosevelt, Chaves, and Eddy Counties; heavy in gins in southern Eddy County. (Judd). MEXICO - Infestation averaged 27.2 percent during green boll inspections on 14 properties (210 acres) in 3 municipios of northern Chihuahua. Found 2,658 larvae in 1,971 bales during 267 lint cleaner inspections in this area. Captured 14 moths in 64 sex lure traps in Caborca, Pitiquito, and Altar area of Sonora. Collected 10,267 larvae in 1,797 bushels of gin trash and in 237 lint cleaners at Caborca; 20,550 acres in 77 fields infested in Caborca Valley. Collected 36 moths in 30 traps at San Luis R.C., Sonora; infestations averaged 10 percent in 6 monitored fields and in adjacent fields. Captured 88 moths in 77 traps at Mexicali; green boll infestations averaged 18 percent in 14 monitored fields and 22 percent in adjacent fields. (PPC Mex. Reg., Oct. Rpt.).

HAWAII INSECT REPORT

Turf, Pasture, Rangeland - Larvae of a GRASS WEBWORM (*Herpetogramma licarsialis*) continue spotty, moderate to heavy in lawns, pastures, parks, and golf courses on Kauai, Maui, Hawaii, and Oahu. Moderate to heavy damage expected to continue remainder of year. Thousands of larvae left severely damaged lawn November 22 on hospital grounds at Honolulu (Wilhelmina Rise), Oahu; larvae up to 175 per square foot on driveway and 200 per square foot at base of walls. (Funasaki et. al.).

General Vegetables on Oahu - GREENHOUSE WHITEFLY (*Trialeurodes vaporariorum*) moderate to heavy on snap beans at Waianae, Waimanalo, Pupukea, Kahaluu, and Kaaawa. CHINESE ROSE BEETLE (*Adoretus sinicus*) foliar damage light to moderate on snap beans in all areas. Larval mines of LEAF MINER FLIES (*Liriomyza* spp.) generally light in snap beans and yard-long beans, medium in few plantings, at Waimanalo and Waianae. Adults remain heavy on weeds and bean crops. BEAN FLY (*Melanagromyza phaseoli*) and CARMINE SPIDER MITE (*Tetranychus cinnabarinus*) generally light on yard-long beans, snap beans, and soybeans in all areas. GREEN PEACH APHID (*Myzus persicae*) light to moderate on daikon, mustard cabbage, white-stemmed cabbage, and eggplant at Waimanalo, Pearl City, Koko Head, and Waianae. BEET ARMYWORM (*Spodoptera exigua*) foliar damage moderate on Chinese peas at Waimanalo. (Wong).

Fruits - Larval damage of a NOCTUID MOTH (*Phlegetonia delatrix*) moderate to foliage of Java-plum at Hamoa and Keanae and to mountain-apple at Hamoa, Maui. This is a new island record. (Davis, Miyahira).

Forest Insects - Infestations of a SCOLYTID BEETLE (*Xyleborus pubescens*) in weakened lama tree (*Diospyros ferrea*) at Halepiula in North Kona on Hawaii Island. This is a new host record. (Davis).

Miscellaneous Insects - A LONGHORN GRASSHOPPER (*Euconocephalus nasutus*) male caught November 25 in yard at Kaimuki area of Honolulu, Oahu, for second known specimen in State. (Au). Adults of a RHOPALID BUG (*Jadera haematoloma*) light on balloonvine along roadsides at Koloa and Poipu, Kauai, for a new island record. (Sugawa).

LIGHT TRAP COLLECTIONS

FLORIDA - Gainesville - 11/23-26, BL - Black cutworm (*Agrotis ipsilon*) 5, granulate cutworm (*Feltia subterranea*) 1. MISSISSIPPI - Stoneville - 11/22-29, BL, 38-72° F., precip. 5.66 - Armyworm (*Pseudaletia unipuncta*) 29, beet armyworm (*Spodoptera exigua*) 4, black cutworm 105, corn earworm (*Heliothis zea*) 1, fall armyworm (*S. frugiperda*) 20, granulate cutworm 22, yellow-striped armyworm (*Prodenia ornithogalli*) 2. TEXAS - Brownsville - 11/23-29, 2BL, 43-84° F., precip. 0.09 - Armyworm 31, black cutworm 36, cabbage looper (*Trichoplusia ni*) 4, fall armyworm 2, granulate cutworm 4, salt-marsh caterpillar (*Estigmene acrea*) 1, variegated cutworm (*Peridroma saucia*) 10. Waco - 11/23-29, BL - Armyworm 48, beet armyworm 31, black cutworm 6, fall armyworm 4, granulate cutworm 63, tobacco budworm (*H. virescens*) 1, variegated cutworm 19.

INSECT DETECTION

New State Record

TUBER FLEA BEETLE (Epitrix tubensis) - CALIFORNIA - On beans at Fort Jones, Siskiyou County. Collected by R.S. Richards and R.P. Allen June 6, 1968. Determined by T.N. Seeno and confirmed by L.G. Gentner. (p. 1097).

New County and Island Records

A BILLBUG (Sphenophorus venatus vestitus) - CALIFORNIA - Orange County. (p. 1096).

ALFALFA WEEVIL (Hypera postica) - WISCONSIN - Columbia County. (p. 1096).

A JAPANESE WEEVIL (Calomycterus setarius) - MISSOURI - Platte County. (p. 1096).

APPLE MAGGOT (Rhagoletis pomonella) - WISCONSIN - Shawano County. (p. 1097).

A TISCHERIID MOTH (Tischeria aenea) - FLORIDA - Highlands County. (p. 1098).

A SAP BEETLE (Conotelus mexicanus) - CALIFORNIA - Tulare County. (p. 1098).

AN EPIPASCHIID MOTH (Tetralopha asperatella) - MARYLAND - Queen Annes County. (p. 1098).

A NOCTUID MOTH (Phlegetonia delatrix) - HAWAII - Maui Island. (p. 1101).

A RHOPALID BUG (Jadera haematoloma) - HAWAII - Kauai Island. (p. 1101).

CORRECTIONS

CEIR 18(46):1068 - EUROPEAN EARWIG ... Collected ... June 7, 1968, ... should read ... Collected ... June 17, 1968.

Weather of the week continued from page 1094.

Moderate to heavy rains fell from eastern Texas to the Great Lakes -- mostly in the first half of the week. Flash flooding occurred along a few small streams in Tennessee and Mississippi. A few tornadoes occurred Tuesday and Wednesday nights in Texas and Louisiana causing mostly light damage to trees, farm buildings, and utility lines. Precipitation occurred from Thursday to Sunday along the Atlantic coast. Amounts were generally light to moderate.

TEMPERATURE: Above normal temperatures prevailed over most of the West early in the week but a drop in temperatures caused the week to average colder than seasonal. Subzero readings were common in the higher Rockies. Frazer, Colorado, elevation about 8,000 feet, registered 33° below zero on Saturday morning. Temperatures averaged above normal from Washington to New York and southeastward to Florida. The Dakotas and nearby portions of neighboring States averaged 6° to 11° above normal. The East averaged warmer than normal in spite of the cool weekend, when afternoon readings were mostly in the 40's and low 50's. (Summary supplied by Environmental Data Service, ESSA.)

SURVEY METHODS

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Part XIV

Additional copies of Parts I through XIV of this bibliography are available from Survey and Detection Operations.

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Forage Crop Insects in Massachusetts in 1968

F.R. Shaw, S. Dennis, L. Dondero, D. Miller, M. Miller, and C.P.S. Yadava

Population studies of forage crop insects were conducted from April 22 through August 4. Limited collections were conducted subsequently, primarily to determine incidence of alfalfa weevil and of its parasites.

Collections were made at approximately weekly intervals in Hampshire County. Some sampling was also conducted in Berkshire, Bristol, Essex, Franklin, Plymouth, and Worcester Counties. Each collection consisted of 100 sweeps with a 15-inch net. The insects were identified in the laboratory and their numbers tabulated. The following table is based on a collection of 23,149 insects.

Populations of Insects Collected on Forage Crops - 1968

Insect Name or Group	Percent of Total
Pea Aphid (<u>Acyrtosiphon pisum</u>)	34.63
Alfalfa Weevil (<u>Hypera postica</u>)	32.22
Plant Bugs	11.92
Meadow Spittlebug (<u>Philaenus spumarius</u>)	11.48
Leafhoppers	2.33
Lepidoptera	1.05
Grasshoppers	0.91
Sawflies	0.05
Beneficial Arthropods	
Nabis spp.	1.60
Parasitic Hymenoptera	1.00
Spiders	0.97
Coccinellids (lady beetles)	0.72
Chrysopids	0.16
Syrphids	0.16
Pentatomids	0.11

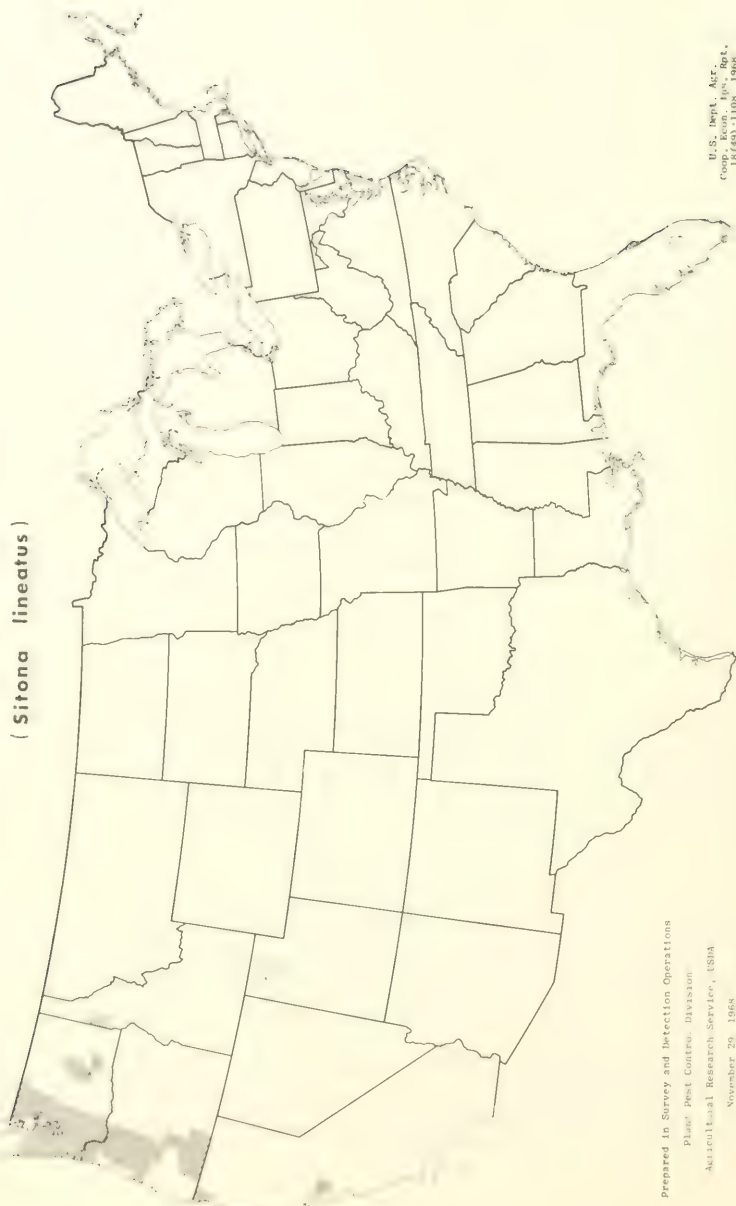
In comparison with the populations observed in 1967, some rather obvious changes occurred. For the first time in several years pea aphid (Acyrtosiphon pisum) surpassed alfalfa weevil (Hypera postica) in abundance, doubling its 1967 occurrence. Meadow spittlebug (Philaenus spumarius) was much more numerous, increasing from 2.7 percent in 1967 to 11.48 percent in 1968. Leafhoppers decreased from 12.7 percent in 1967 to 2.3 percent in 1968. Nabis spp., parasitic Hymenoptera, pentatomids, and spiders were more numerous in 1968.

In order to determine the incidences of parasitism, collections were made at approximately weekly intervals from April 22 and were continued until low temperature stopped the activity of alfalfa weevil and its parasites.

The following conclusions relative to parasitism are those of M.C. Miller: "Bathyplectes curculionis maintained at least 80 percent parasitism of alfalfa weevil larvae (in fields sampled) from May 8 through July 8 except for the period of peak alfalfa weevil population (May 1-15) when parasitism dropped to 30 percent. Tetrastichus incertus maintained a parasitism rate of less than 10 percent from May 23 through July 12. By July 22 parasitism increased to 70 percent."

Observations were made of the preferences of Nabis rufusculus, Podisus maculiventris, and P. placidus for alfalfa weevil larvae and for pea aphid. The nabid preferred pea aphid whereas the pentatomids preferred alfalfa weevil larvae. Some limited observations of the host selection of chrysopid larvae showed these insects selected pea aphids in preference to nymphal leafhoppers and plant bugs and to alfalfa weevil larvae.

Distribution of Pea Leaf Weevil
(*Sitona lineatus*)



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Cooperative
**ECONOMIC INSECT
REPORT**

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

CORN LEAF APHID heavy on barley in Los Angeles County, California. GREENBUG activity heavy and widespread in Motley County, Texas. (p. 1111).

CABBAGE LOOPER heavy on tomatoes, cole crops, and lettuce in Rio Grande Valley of Texas; remains problem on lettuce in Yuma County, Arizona. (p. 1113).

An ARMORED SCALE at record high level for November on Florida citrus. (p. 1114).

PINE NEEDLE SCALE heavy on Jeffrey pines in El Dorado County, California. (p. 1115).

SHORT-NOSED CATTLE LOUSE unusually severe on dairy cattle in Stanislaus County, California. (p. 1115).

Detection

For new county records see page 1117.

Special Reports

Distribution of Elm Leaf Beetle (map). (p. 1118).

Important Insects and Snails Most Frequently Intercepted at United States Ports of Entry in Fiscal Year 1967. (pp. 1119-1134).

Reports in this issue are for week ending December 6 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING DECEMBER 9

HIGHLIGHTS: Winter cold advanced far southward. Subzero cold occurred in New Mexico and hard freezes in Georgia and Florida. Heavy snow fell in the Cascades and in lee of the Great Lakes.

PRECIPITATION: Daily rains along the northwest Pacific coast and snow in the Cascades continued the pattern which has prevailed for several weeks and which normally can be expected to endure until spring. Amounts exceeded 4 inches along the coast, ranged from 2 to 3 inches in the interior valleys, to more than 4 inches on the western slopes of the Cascades, and about 0.5 inch on the eastern slopes. Snow depths reached 48 inches at 3,000 feet and 96 inches at 5,500 feet in the Cascades. Snow or snow flurries continued from the northern Great Plains to New England. By Friday the snow depth at Greenville, Maine, had reached 17 inches. Depths in New York exceeded 20 inches locally in the lee of Lakes Erie and Ontario. Little or no precipitation fell in the Far Southwest and along the western edge of the Great Plains from the Dakotas to the Rio Grande. Only light snow fell in the central and southern Rockies. Light rains fell in the Deep South and much of the East early in the week. Snow flurries accompanied the colder weather in the East from Thursday to Sunday with depths ranging from 10 inches locally in northeastern Ohio to an inch or so in North Carolina.

TEMPERATURE: Subzero temperatures occurred in the central and southern Rocky Mountains early in the week and in the northern Rockies and parts of the northern Great Plains over the weekend. Zuni, New Mexico, registered 8° below zero on Monday morning, December 2, and Bemidji, Minnesota, 17° below zero on Sunday morning, December 8. Subfreezing temperatures advanced far southward into Dixie reaching the Gulf of Mexico Monday morning, December 9, when New Orleans, Louisiana, and Mobile, Alabama, recorded 31° and 28°, respectively. Idaho and nearby parts of neighboring States experienced cold mornings but mild afternoons, averaging slightly above normal. Temperatures averaged below normal elsewhere in the West. The Great Lakes region and the Northeast averaged slightly warmer than normal but below-normal average temperatures were general from the central Great Plains to the gulf and eastward to the Atlantic Ocean due to the cold weather which began about Thursday and intensified to the end of the period. (Summary supplied by Environmental Data Service, ESSA.)

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

CORN LEAF APHID (Rhopalosiphum maidis) - CALIFORNIA - Nymphs and adults heavy on barley plantings at Lancaster, Los Angeles County. (Cal. Coop. Rpt.). ARIZONA - Found on new alfalfa and nurse-crop barley in Yuma Valley, Yuma County. (Ariz. Coop. Sur.). KANSAS - Light, 0-5 per row foot, in wheat examined in Brown, Doniphan, and Atchison Counties. (Simpson).

GREENBUG (Schizaphis graminum) - KANSAS - Light, 0-20 per row foot, in wheat in Gray, Meade, Clark, Harper, Barber, Comanche, Sumner, Butler, and Cowley Counties November 16-22. (Redding). Ranged 1-9 per row foot in wheat in Finney County. (DePew). Decreased from high of 85 per row foot 3 weeks ago to 5-20 per row foot in wheat in Doniphan and Atchison Counties. Ranged 1-3 per row foot in all wheat examined in Shawnee, Douglas, Jefferson, and Leavenworth Counties and 1-15 per row foot in wheat in Washington, Republic, Jewell, Smith, Phillips, Rooks, Osborne, Mitchell, and Cloud Counties. Present in all fields examined in north-central district. (Simpson). OKLAHOMA - Ranged 1-2 per row foot in most wheat in southwest, west-central, northwest, and panhandle counties. Counts per row foot ranged 10-15 in Cleo Springs area, Major County; 5-10 in Friendship area, Jackson County; and averaged 5 in Roosevelt area, Kiowa County. Light in wheat in Cleveland County. (Okla. Coop. Sur.). TEXAS - Generally light, up to 10 per row foot, on small grains in widespread areas near Quemado, Maverick County; heavier in some fields. Damaged oats in some areas of Kent County. Ranged 40-200 per row foot on wheat in Knox County; activity heavy and widespread in Motley County. Some controls applied in Knox and Motley Counties. (Tapscott et al.). ARKANSAS - Heavy in oatfield in Prairie County; counts of 10-50 per plant killed areas in field up to one acre. Controls applied. (Barnes). Survey negative in northwest area. (Boyer, Dumas). MARYLAND - Moderate to heavy on rye cover crop throughout Eastern Shore. (U. Md., Ent. Dept.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - ARIZONA - Ranged 40-1,320 per 100 sweeps on alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.). ARKANSAS - Survey continues negative in northwest area. (Boyer).

TOBACCO BUDWORM (Heliothis virescens) - CALIFORNIA - Light on geraniums at Encinitas and damaging yard geraniums at Fallbrook, San Diego County. (Cal. Coop. Rpt.).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - NEBRASKA - General population increase on corn in State indicated by fall survey in 1968. Increase greatest in south-eastern counties. Extremely dry conditions apparently caused slight reduction compared with 1967 in several northeastern counties. (Keith).

SMALL GRAINS

ENGLISH GRAIN APHID (Macrosiphum avenae) - OKLAHOMA - Ranged 5-10 per row foot on Kiowa County wheat. (Okla. Coop. Sur.).

HESSIAN FLY (Mayetiola destructor) - KANSAS - Detected on one wheat sample in each of Ellsworth, Ness, and Butler Counties; survey negative in 16 other counties. Collected by W. Redding and examined by H.W. Somsen. (Simpson).

WINTER GRAIN MITE (Penthaleus major) - CALIFORNIA - Medium on volunteer oats at Clovis, Fresno County. (Cal. Coop. Rpt.).

WHEAT CURL MITE (Aceria tulipae) - KANSAS - Detected on 2 wheat samples in Meade County; survey negative in 18 other counties. Collected by W. Redding and examined by H.W. Somsen. (Simpson).

TURF, PASTURES, RANGELAND

APHIDS - CALIFORNIA - *Asiphonella dactylonii* and *Rhopalosiphum* sp. medium on hybrid Bermuda grass in nursery at San Gabriel, and heavy at Carson, Los Angeles County. (Cal. Coop. Rpt.).

A SPRINGTAIL (*Hypogastrura armata*) - CALIFORNIA - Heavy in lawns at Fremont, Alameda County. (Cal. Coop. Rpt.).

FORAGE LEGUMES

EGYPTIAN ALFALFA WEEVIL (*Hypera brunneipennis*) - ARIZONA - Adults averaged 20 per 100 sweeps in alfalfa in Pinal County. First adult found in alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.). CALIFORNIA - Larvae, probably this species, medium on alfalfa at Lancaster, Los Angeles County. Activity unusually early; infestations normally appear about February. (Cal. Coop. Rpt.).

ALFALFA WEEVIL (*Hypera postica*) - INDIANA - Adults averaged 30 per 100 sweeps and eggs 18 per 100 stems in alfalfa in Ripley and Dearborn Counties as of November 15. (Huber, McGroarty).

CLOVER ROOT CURCULIO (*Sitona hispidulus*) - INDIANA - Adults averaged 14 per 100 sweeps on alfalfa in southeast district. (McGroarty).

SPOTTED CUCUMBER BEETLE (*Diabrotica undecimpunctata howardi*) - FLORIDA - Adults 16 per 200 sweeps in foot-high alfalfa at Gainesville, Alachua County. (Mead).

CABBAGE LOOPER (*Trichoplusia ni*) - ARIZONA - Larvae 75 per 100 sweeps in alfalfa in Pinal County. (Ariz. Coop. Sur.).

BEET ARMYWORM (*Spodoptera exigua*) - ARIZONA - Larvae decreased sharply past 2 weeks; averaged 60 per 100 sweeps in alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.).

ALFALFA CATERPILLAR (*Colias eurytheme*) - ARIZONA - Averaged 50 per 100 sweeps in alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Average per 100 sweeps in alfalfa by county: Pinal 150 and Yuma 30. (Ariz. Coop. Sur.). FLORIDA - Adults 5 per 200 sweeps in foot-high alfalfa at Gainesville, Alachua County. (Mead).

MEADOW SPITTLEBUG (*Philaenus spumarius*) - INDIANA - Adults averaged 192 per 100 sweeps on alfalfa in southeast district November 15. (McGroarty).

PEA APHID (*Acyrtosiphon pisum*) - ARIZONA - Averaged 60 per 100 sweeps in alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.). ARKANSAS - Light, 0-5 per square foot, in alfalfa and vetch in northwest area. (Boyer). FLORIDA - Mostly adults 11 per 200 sweeps in foot-high alfalfa at Gainesville, Alachua County. (Mead).

COWPEA APHID (*Aphis craccivora*) - ARIZONA - Averaged 60 per 100 sweeps in alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.).

PLANT BUGS - ARIZONA - *Lygus* spp. declined to 30 per 100 sweeps in alfalfa at Yuma, Yuma County. Averaged 50 per 100 sweeps in Pinal County. (Ariz. Coop. Sur.). FLORIDA - *L. lineolaris* adults 13 and *Taylorilygus pallidulus* adults 20 per 200 sweeps in foot-high alfalfa at Gainesville, Alachua County. (Mead).

A LEAF MINER FLY (*Liriomyza trifolii*) - ARIZONA - Heavy on young alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.).

SOYBEANS

A CERAMBYCID BEETLE (Dectes spinosus) - ARKANSAS - Larvae, probably this species, caused loss of 5 bushels per acre due to lodging in Lincoln County. First experience with this type of damage in State. (Boyer).

SUGARBEETS

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Averaged 50 per 100 sweeps in Pinal County. (Ariz. Coop. Sur.).

POTATOES, TOMATOES, PEPPERS

CABBAGE LOOPER (Trichoplusia ni) - TEXAS - Heavy on tomatoes in widespread areas of Rio Grande Valley; defoliated tomatoes in some areas. (Schuster).

COLE CROPS

CABBAGE LOOPER (Trichoplusia ni) - TEXAS - Heavy on cole crops in widespread areas of Rio Grande Valley; larvae 1-3 per plant in cabbage. (Schuster).

HARLEQUIN BUG (Murgantia histrionica) - TEXAS - Medium on cole crops near Weslaco, Hidalgo County. (Schuster).

GENERAL VEGETABLES

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Full-grown larvae remain problem in lettuce heads ready for harvest at Yuma, Yuma County. (Ariz. Coop. Sur.). TEXAS - Heavy on lettuce in widespread areas of Rio Grande Valley; larvae averaged 0.1 per plant. (Schuster).

GREEN PEACH APHID (Myzus persicae) - ARIZONA - Treatment required in lettuce field at Yuma, Yuma County. (Ariz. Coop. Sur.). MARYLAND - Remains light in 100 acres of beets near Vienna, Dorchester County; light to moderate on 400 acres of spinach. (U. Md., Ent. Dept.).

DECIDUOUS FRUITS AND NUTS

SAN JOSE SCALE (Aspidiotus perniciosus) - CALIFORNIA - Generally heavy on 3-acre cherry planting at Auburn, Placer County. (Cal. Coop. Rpt.).

PECAN CARPENTERWORM (Cossula magnifica) - ALABAMA - Larval damage severe to trunks and limbs of several 5-year-old pecan trees at Houston County home. Determined by D.M. Weisman. (Stephenson).

CITRUS

Citrus Insect Situation in Florida - End of November - CITRUS RUST MITE (Phyllocoptruta oleivora) infested leaves in 64 (norm 71) percent of groves; 42 (norm 47) percent economic. Infested fruit in 71 (norm 68) percent of groves; 52 (norm 47) percent economic. Still in high range and above normal on fruit. Frosty mid-November started downward trend which is expected to continue. About 30 percent of groves will harbor heavy infestations in December and January. Highest districts south, west, and north. TEXAS CITRUS MITE (Eutetranychus banksi) infested 22 (norm 35) percent of groves; 7 (norm 14) percent economic. Increased but still below normal and in low range. Further expected increase will result in scattered heavy infestations. Highest districts central and south. CITRUS RED MITE (Panonychus citri) infested 20 (norm 35) percent of groves;

2 (norm 10) percent economic. Little change expected; very few infestations will be important. Highest district south. GLOVER SCALE (Lepidosaphes gloverii) infested 51 (norm 70) percent of groves; 2 (norm 14) percent economic. Below average and low. Little change expected. Highest districts west and east. PURPLE SCALE (L. beckii) infested 46 (norm 67) percent of groves; less than 1 (norm 7) percent economic. Will remain below normal and low. Highest district east. YELLOW SCALE (Aonidiella citrina) infested 48 (norm 59) percent of groves; less than 1 (norm 10) percent economic. Below normal and low. Slight increase expected. Highest district east. BLACK SCALE (Saissetia oleae) infested 37 (norm 34) percent of groves; 11 (norm 11) percent economic. Slight increase expected from current normal low level. Highest districts east and central. An ARMORED SCALE (Unaspis citri) infested 14 percent of groves; moderate or heavy in 4 percent. At record high level for November. Slight increase expected. Purple scale, FLORIDA RED SCALE (Chrysomphalus aonidum), BROWN SOFT SCALE (Coccus hesperidum), COTTONY-CUSHION SCALE (Icerya purchasi), PYRIFORM SCALE (Protopulvinaria pyrifomis), citrus red mite, and grasshoppers at lowest November levels in 18 years of record. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

SOFT SCALES - ARIZONA - Coccus hesperidum (brown soft scale) and Saissetia oleae (black scale) infested citrus at Somerton, Yuma County. (Ariz. Coop. Sur.).

COWPEA APHID (Aphis craccivora) - ARIZONA - Infesting terminals at Yuma, Yuma County. (Ariz. Coop. Sur.).

CITRUS RED MITE (Panonychus citri) - ARIZONA - Despite cooler weather, some groves treated at Yuma, Yuma County. (Ariz. Coop. Sur.).

OTHER TROP. & SUBTROP. FRUITS

AN APHID (Pentalonia nigronervosa) - CALIFORNIA - Local infestation on banana trees at Compton, Los Angeles County. First record for this county. Occurred outdoors in a few locations this summer. (Cal. Coop. Rpt.).

A MEALYBUG (Pseudococcus obscurus) - CALIFORNIA - Medium on avocado trees at Santa Cruz, Santa Cruz County. (Cal. Coop. Rpt.).

PAPAYA FRUIT FLY (Toxotrypana curvicauda) - FLORIDA - Adults collected in McPhail traps at Sebring, Highlands County (Morris, Nov. 6); at Sarasota, Sarasota County (Hiatt, Nov. 27); and at Daytona Beach, Volusia County (Pott, Nov. 27).

ORNAMENTALS

AN ARMORED SCALE (Phenacaspis cockerelli) - FLORIDA - All stages collected on Dipladenia sp. at Naples, Collier County. (Walsh, Crews). This is a new Florida Department of Plant Industry host record. (Fla. Coop. Sur.).

AN ARMORED SCALE (Diaspis boisduvalii) - FLORIDA - Adults infested 125 of 500 orchid plants in nursery at Winter Haven, Polk County. (Schmidt, Nov. 26).

BEET ARMYWORM (Spodoptera exigua) - CALIFORNIA - Larvae medium, destroying Primula malacoides nursery stock at Auburn, Placer County. (Cal. Coop. Rpt.).

FOREST AND SHADE TREES

SCALES - CALIFORNIA - Phenacaspis pinifoliae (pine needle scale) and Matsucoccus sp. (a margarodid scale) heavy on Jeffrey pines at south Tahoe, El Dorado County. Developed rapidly this season in large local areas on lake shore. Much concern over infestations and needle drop in this extremely high value recreation area. Nuculaspis pini (black pine-leaf scale), Physokermes sp. (a soft scale), and Pineus sp. (a Bark aphid) heavy on lodgepole pine in many areas. (Cal. Coop. Rpt.).

ENGRAVER BEETLES (Ips spp.) - MARYLAND - Killed several Virginia pines at Pasadena, Anne Arundel County. (U. Md., Ent. Dept.).

A GALL WASP (Andricus fullawayi) - CALIFORNIA - Pupae medium on leaves of blue oaks at Alpine, San Diego County. (Cal. Coop. Rpt.).

MAN AND ANIMALS

SCREW-WORM (Cochliomyia hominivorax) - Total of 71 cases reported in U.S. December 1-7 as follows: TEXAS - Atascosa 2, Bexar 2, Brooks 1, Cameron 1, Crockett 2, Dimmit 7, Duval 2, Frio 7, Jim Hogg 1, Kinney 3, La Salle 2, Llano 1, Maverick 4, Medina 7, Starr 2, Uvalde 1, Val Verde 5, Webb 9, Willacy 2, Wilson 1, Zapata 1, Zavala 3; ARIZONA - Maricopa 2, Yuma 1; CALIFORNIA - Imperial 1, Riverside 1. Sterile screw-worm flies released: Texas 59,608,000; Arizona 1,900,000; California 500,000; Mexico 102,940,000. (Anim. Health Div.).

CATTLE LICE - ALABAMA - Many beef cattle showing earlier and light symptoms. Some neck and shoulder rubbing over small underbrush and fenceposts in some smaller, undeveloped herds. (Teague et al.). CALIFORNIA - Haematopinus eurysternus (short-nosed cattle louse) outbreak unusually severe on dairy cattle in several areas at Modesto, Stanislaus County. Heavy on tails and upper udder areas. Cattle responding to treatment. (Cal. Coop. Rpt.).

NORTHERN FOWL MITE (Ornithonyssus sylviarum) - ALABAMA - Heavy buildup in cage laying operation at Hayneville, Lowndes County; controls difficult. (Mathews).

BROWN RECLUSE SPIDER (Loxosceles reclusa) - MISSOURI - Collected in Bates, Benton, Camden, Cedar, Cole, Cooper, Dallas, Dade, Dunklin, Laclede, Lawrence, Miller, Morgan, Pemiscot, Pulaski, St. Clair, and Stone Counties for new county records. Collected by J.L. Huggans, L.R. Hanning, F.G. Jones, L.H. Barrows, and J.E. Francka in 1968. (Munson).

STORED PRODUCTS

POTATO TUBERWORM (Phthorimaea operculella) - MARYLAND - Heavy in stored potatoes at 3 locations in Charles County. (U. Md., Ent. Dept.). VIRGINIA - Larvae severe in about 20 bushels of potatoes in home garden in Spotsylvania County. Determined by W.A. Allen. (Kash, Nov. 26).

MEDITERRANEAN FLOUR MOTH (Anagasta kuehniella) - OREGON - Adults and larvae numerous in flour mills at Portland, Multnomah County. Adults and larvae of Tribolium confusum (confused flour beetle) and larvae of Attagenus piceus (black carpet beetle) heavy in A. kuehniella webbing. (Larson, Westcott).

ALMOND MOTH (Cadra cautella) - CALIFORNIA - Larvae and adults heavy in garlic in warehouse at San Juan Bautista, San Benito County. (Cal. Coop. Rpt.).

CADELLE (*Tenebroides mauritanicus*) - OREGON - Heavy in waste bin in feed mill at Portland, Multnomah County. *Sitophilus granarius* (granary weevil) extremely numerous in bin with fewer *Tribolium confusum* (confused flour beetle) and *Tenebrio molitor* (yellow mealworm). (Larson, Westcott).

LESSER GRAIN BORER (*Rhyzopertha dominica*) - OREGON - Adults up to 8 per kernel in corn in feed mill at Portland, Multnomah County. (Larson, Westcott).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

PINK BOLLWORM (*Pectinophora gossypiella*) - CALIFORNIA - Harvest being rapidly completed after delay from recent rains. About 70 percent of crop harvested and good percentage of fields shredded and disked. No pink bollworm detected during season in San Joaquin Valley; released 9,174,379 sterile moths for season. Percent boll infestations by end of season averaged 15 in Imperial Valley, 20 in Palo Verde Valley, 40 in Coachella Valley, and 70 (high) in Borrego Valley. Unusually favorable growing conditions produced exceptionally good crop in spite of pink bollworm. Expect estimated 2.5 bales per acre. Good cultural practices of shredding, plowup, cleanup, irrigation plus host free period, and releasing of sterile moths were apparently beneficial. Outlook for 1969 depends on growers following recommended cultural controls. (Cal. Coop. Rpt.). ARIZONA - Larvae averaged 55 per lint cleaner in gins at Yuma, Yuma County. (Ariz. Coop. Sur.). NEW MEXICO - Medium to heavy during lint cleaner inspections in 2 Eddy County gins. (Judd). About 70 percent of larvae dead in green wet bolls in southern Dona Ana County. (Nielsen). OKLAHOMA - Positive in lint cleaner inspections during November in additional counties of Comanche, Harmon, Kiowa, Garvin, Stephens, Custer, and Hughes. (Okla. Coop. Sur.).

JAPANESE BEETLE (*Popillia japonica*) - VIRGINIA - Larvae medium in rose border in Prince Edward County. Determined by W.A. Allen. (Peery, Nov. 30).

LIGHT TRAP COLLECTIONS

MISSISSIPPI - Stoneville - 11/29-12/6, BL, 32-58°F., precip. 2.30 - Armyworm (*Pseudaletia unipuncta*) 6, black cutworm (*Agrotis ipsilon*) 11, fall armyworm (*Spodoptera frugiperda*) 2, granulate cutworm (*Feltia subterranea*) 6, yellow-striped armyworm (*Prodenia ornithogalli*) 1. TEXAS - Brownsville - 11/30-12/6, 2BL, 37-80 F., precip. 0.09 - Armyworm 23, black cutworm 13, cabbage looper (*Trichoplusia ni*) 3, fall armyworm 1, granulate cutworm 4, tobacco budworm (*Heliothis virescens*) 1, variegated cutworm (*Peridroma saucia*) 18, yellow-striped armyworm 1.

HAWAII INSECT REPORT

Turf, Pasture - A GRASS WEBWORM (Herpetogramma licarsisalis) continues moderate to heavy and spotty in various areas on Kikuyu grass, Bermuda grass, Henrys crabgrass, Pangola grass, carpetgrass, Hilo grass, and St. Augustine grass on Kauai, Oahu, Maui, and Hawaii; light in pastures on east Molokai. (Miyahira et al.).

General Vegetables - BEET ARMYWORM (Spodoptera exigua) and LEAF MINER FLIES (Liriomyza spp.) generally light in green onions at Waianae, Waimanalo, Koko Head, and Kahuku, Oahu. (Yamamoto, Sato). TARO LEAFHOPPER (Tarophagus proserpina) heavy and Cyrtorhinus fulvus (a predaceous capsid bug) adults very evident in taro patch at Waimea, Kauai. (Sugawa).

Fruits - LARGE MANGO TIP BORER (Bombotelia jocosatrix) larvae remain trace on mango foliage throughout Oahu. Light but spreading on Kauai; found as far west as Waimea. (Nakao, Sugawa). Larvae of a NOCTUID MOTH (Phlegetonia delatrix) severe on mountain-apple at Pukalani, Maui; damage extremely heavy to terminal leaves. (Miyahira).

Ornamentals and Others - BARNACLE SCALE (Ceroplastes cirripediformis) light on gold tree (Cybistax donnell-smithi) and dwarf pomegranate (Punica granatum var. nana) at Honolulu International Airport and on asystasia (Asystasia gangetica) and sourbush (Pluchea odorata) on Sand Island, Oahu. All are new host records. (Shiroma, Olson).

Forest, Shade Trees - Nymphs and adults of a PSYLLID (Psylla uncatoides) trace to light on acacia at Waimanalo, Kaneohe, and Honolulu (Nuuanu, Kalihi), Oahu; negative on albizzia at Honolulu. Generally light on Oahu since discovery in March 1966. (Funasaki).

Beneficial Insects - Parasitism of Herpetogramma licarsisalis (a grass webworm) by a MINUTE EGG PARASITE (Trichogramma semifumatum) averaged 75 percent on Mt. Hualalai, Hawaii Island, at 2,100-3,800 feet elevation; 86 percent at Hana, Maui; and 85 percent at Kaneohe and Kaaawa, Oahu, during November. Several larval parasites common in pastures. (Yoshioka et al.).

Miscellaneous Pests - Two live GIANT AFRICAN SNAIL (Achatina fulica) specimens collected at Kahaluu, North Kona, Hawaii Island, and one at Poipu, Kauai, during November. Poison bait applications and surveillance continuing. Recent heavy rains activated populations in weed areas on Maui and Oahu and caused movement into residences and farms. Baits necessary to protect crops in some areas. (Yoshioka et al.). A GRASSHOPPER (Oedaleus abruptus) adult found during spot check of known infested grassy areas at Hickam Air Force Base, Honolulu, Oahu, after 4 days of heavy rains. (Olson).

INSECT DETECTION

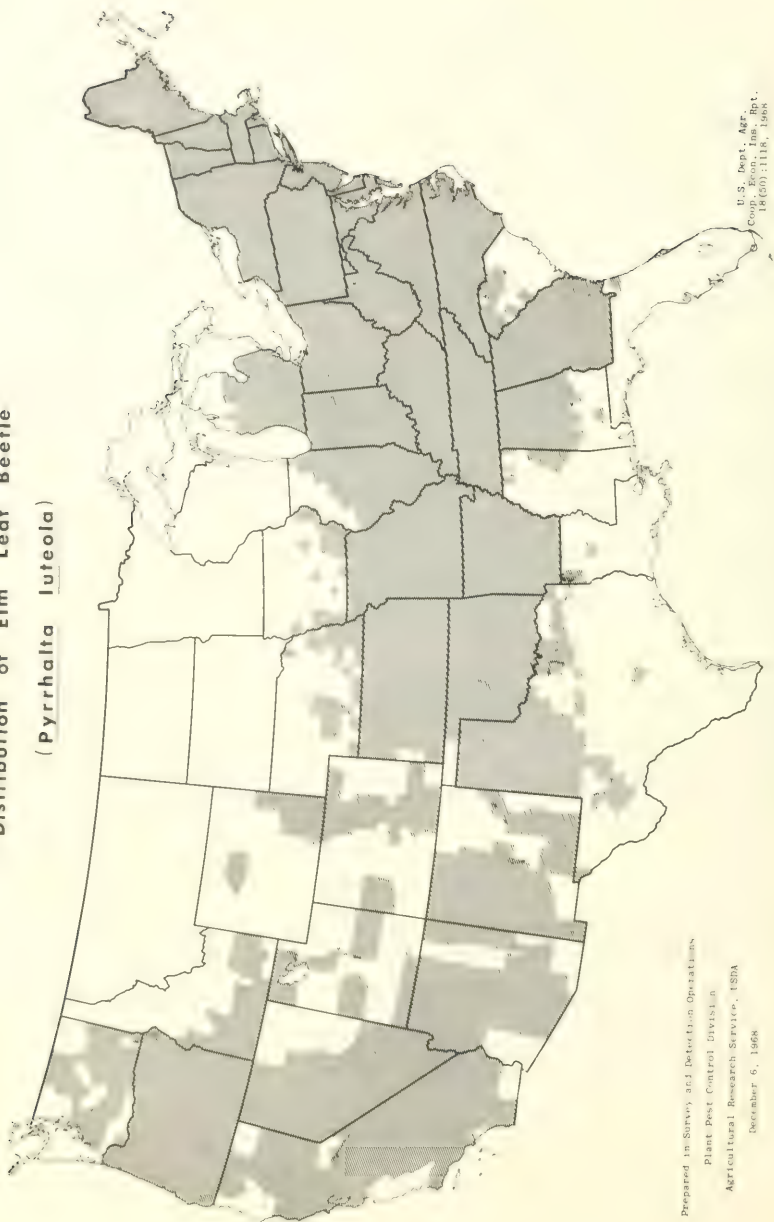
New County Records

GIANT HORNET (Vespa crabro germana) - INDIANA - Adult specimen from Scott County determined from State Entomologist's office collection. (Chandler, Nov. 29).

AN APHID (Pentalonia nigronervosa) - CALIFORNIA - Los Angeles County. (p. 1114).

BROWN RECLUSE SPIDER (Loxosceles reclusa) - MISSOURI - Bates, Benton, Camden, Cedar, Cole, Cooper, Dallas, Dade, Dunklin, Laclede, Lawrence, Miller, Morgan, Pemiscot, Pulaski, St. Clair, and Stone Counties. (p. 1115).

Distribution of Elm Leaf Beetle
(*Pyrrhalta luteola*)



Prepared in Survey, and Detection Operations
Plant Pest Control Division
Agricultural Research Service, USDA
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Coop. Econ. Ins. Rpt.
18(50):1118, 1968

IMPORTANT INSECTS AND SNAILS MOST FREQUENTLY INTERCEPTED AT
UNITED STATES PORTS OF ENTRY IN FISCAL YEAR 1967

This list was abstracted from the records compiled by the Plant Quarantine Division, ARS, USDA. These plant pests were intercepted at ports of entry from July 1, 1966, through June 30, 1967.

Only those pests intercepted 10 or more times during the year are included here. A total of 41,015 plant pests were submitted from ports of entry during the year. Of those identified during the year, 11,407 were considered of enough significance to be tabulated, as compared with 9,486 the previous year. This does not include the noneconomic or the incompletely determined pests, of which a total of 1,006 interceptions were indexed for the files but were not added to the figures in the summary. The complete interception list which includes all insects, mites, snails, bacteria, fungi, nematodes, and viruses of known or potential plant quarantine significance to the United States may be obtained from Plant Quarantine Division, Federal Center Building, Hyattsville, Maryland 20782.

<u>Pest</u>	<u>Host</u>	<u>Country of Origin</u>	<u>Number of Interceptions</u>
<u>Achatina fulica</u> Bowdich (Achatinidae)	Aircraft Baggage Cargo Ship (hold and pallets) Soil with cargo	Guam, Hawaii, Thailand	16
<u>Acrolepia assectella</u> (Zell.) (Yponomeutidae)	<u>Allium fistulosum</u> (Welsh onion) <u>A. porrum</u> (leek) <u>A. sativum</u> (garlic)	Belgium, England, France, Germany, Italy, Japan, Netherlands, Spain	16
<u>Acutaspis umbonifera</u> (Newstead) (Diaspididae)	Bromeliad (plant) leaf Orchid (plant) leaf and stem	El Salvador, Colombia, Costa Rica, Guatemala Honduras, Mexico, Panama, Peru, Venezuela	21
<u>Adoretus sinicus</u> Burm. (Scarabaeidae)	Aircraft <u>Alpinia purpurata</u> (cut flowers) <u>Anthurium</u> sp. (flower) Baggage Cargo Flowers (mixed) Mail Passenger Plant material (tropical foliage) <u>Strelitzia reginae</u> (Queen bird-of-paradise flower)	Asia (country-?), Guam, Hawaii, Japan, Okinawa	30
<u>Aethus indicus</u> (Westw.) (Cydnidae)	Aircraft Cargo	Japan, Midway (?), Okinawa (?), Asia (country-?), Philippines	20
<u>Aleurocanthus woglumi</u> Ashby (Aleyrodidae)	<u>Citrus aurantifolia</u> (lime) leaf <u>C. reticulata</u> cv. (cultivar orange) leaf <u>C. sinensis</u> (sweet orange) leaf <u>Citrus</u> sp. (leaf)	Colombia, Mexico, Peru	22

<u>Pest</u>	<u>Host</u>	<u>Country of Origin</u>	<u>Number of Interceptions</u>
<u>Anastrepha ludens</u> (Loew) (Tephritidae)	<u>Calocarpum sapota</u> (sapote) <u>Casimiroa edulis</u> (White sapote) <u>Citrus aurantifolia</u> (sweet lime) <u>C. aurantium</u> (sour orange) <u>C. limon</u> var. <u>ponderosa</u> (Ponderosa lemon) <u>C. medica</u> (citron) <u>C. paradisi</u> (grapefruit) <u>C. sinensis</u> (sweet orange) <u>Cydonia oblonga</u> (quince) <u>Diospyros kaki</u> (kaki persimmon) <u>Eriobotrya japonica</u> (loquat) <u>Malus sylvestris</u> (apple) <u>Prunus persica</u> (peach) <u>Psidium guajava</u> (guava) <u>Punica granatum</u> (pomegranate)	British Honduras, El Salvador, Guatemala, Mexico	306
<u>Anastrepha mombinpraeoptans</u> Sein. (Tephritidae)	<u>Mangifera indica</u> (mango) <u>Psidium guajava</u> (guava) <u>Spondias mombin</u> (yellow mombin) <u>Spondias purpurea</u> (purple mombin)	Brazil, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Puerto Rico, St. Kitts, unknown	318
<u>Anomala orientalis</u> Waterh. (Scarabaeidae)	Aircraft Cargo Ship	Asia (country-?), Japan, unknown	40
<u>Aonidiella messengeri</u> McK. (Diaspididae)	<u>Chamaedorea</u> sp. (palm) leaf Palm (leaf)	Japan	27
<u>Aspidiotus destructor</u> Sign. (Diaspididae)	<u>Cocos nucifera</u> (coconut) Cuttings - unidentified <u>Cycas</u> sp. (leaf) <u>Laurus nobilis</u> (Grecian laurel) leaf Leaf - unidentified <u>Musa paradisica</u> (plantain) leaf <u>Musa</u> sp. (banana) Orchid (plant) leaf Palm (leaf) <u>Terminalia catappa</u> (tropical almond)	Bahamas, Bora Bora, British Virgin Is. Dominican Republic, El Salvador, Haiti, Jamaica, Japan, Mexico, Philippines, Peru, Vietnam	26
<u>Asterobemisia avellanae</u> (Sign.) (Aleyrodidae)	<u>Rubus</u> sp. (leaf)	Europe (country-?) France	27
<u>Asterolecanium epidendri</u> (Bouche) (Asterolecaniidae)	<u>Bromeliad</u> (plant) leaf <u>Chamaedorea oblongata</u> (palm) Orchid: (<u>Brassavola nodosa</u> , <u>Broughtonia sanguinea</u> , <u>Broughtonia</u> sp., <u>Catasetum</u> sp., <u>Cattleya</u> sp., <u>Epidendrum atropurpureum</u> , <u>Epidendrum</u> sp., <u>Oncidium</u> sp., <u>Sobralia</u> sp., <u>Sophranitis grandifolia</u> , <u>Trichopila marginata</u>) leaf of plant Plant - unidentified leaf	Bahamas, Brazil, Canal Zone, Costa Rica, Colombia, Ecuador, Guatemala, Honduras, Jamaica, Nicaragua, Mexico, Trinidad	40

<u>Pest</u>	<u>Host</u>	<u>Country of Origin</u>	<u>Number of Interceptions</u>
<u>Aulacaspis tubercularis</u> Newst. (Diaspididae)	<u>Mangifera indica</u> (mango)	Colombia, El Salvador, Panama, Philippines, Tahiti, Trinidad	14
<u>Blapstinus punctulatus</u> Solier (Tenebrionidae)	<u>Cucumis melo</u> (melon)	Chile	69
<u>Brachycerus algerus</u> (F.). (Curculionidae)	<u>Allium sativum</u> (garlic)	Italy	10
<u>Bruchus ervi</u> Froelich (Bruchidae)	<u>Lens culinaris</u> (lentil) seed	Greece, Israel, Italy, Lebanon, Rumania (?), Syria	13
<u>Bruchus lentis</u> Froelich (Bruchidae)	<u>Lens culinaris</u> (lentil) seed Stores (in storeroom)	Azores, France, Germany, Greece, Iran, Israel, Italy, Mexico (?), Pakistan, Portugal (?), Turkey, unknown	38
<u>Bruchus tristis</u> Boh. (Bruchidae)	<u>Lathyrus sativus</u> (grass peavine) seed <u>Psophocarpus tetragonolobus</u> (goa bean) <u>Vicia faba</u> (faba bean)	Italy	10
<u>Callosobruchus analis</u> (F.) (Bruchidae)	<u>Arachis hypogaea</u> (peanut) seed <u>Cicer arietinum</u> (gram chickpea) seed <u>Lens culinaris</u> (lentil) chickpea) seed <u>Oryza sativa</u> (rice) <u>Phaseolus aureus</u> (mung bean) <u>P. vulgaris</u> (kidney bean) <u>Phaseolus</u> sp. (bean) <u>Pisum sativum</u> (peas) dried Stores Seed - unidentified <u>Vigna sinensis</u> (cowpea) seed	India, Indonesia, Japan, Pakistan, Thailand, Unknown	16
<u>Ceratitidis capitata</u> (Wied.) (Tephritidae)	<u>Annona cherimola</u> (cherimoya) <u>Calophyllum inophyllum</u> (kaman) <u>Capsicum annuum</u> (redpepper) <u>Carica papaya</u> (papaya) <u>Citrus aurantifolia</u> (lime) <u>C. limon</u> (lemon) <u>C. paradisi</u> (grapefruit) <u>C. reticulata</u> cv. (cultivar orange) <u>C. sinensis</u> (sweet orange) <u>Citrus</u> sp. (fruit) <u>Coffea arabica</u> (Arabian coffee) berry <u>Cydonia oblonga</u> (quince) <u>Diospyros</u> sp. (persimmon) <u>Eriobotrya japonica</u> (loquat) <u>Eugenia malaccensis</u> (mountain apple) <u>Eugenia</u> sp. (fruit) <u>Ficus carica</u> (fig) Fruit - unidentified <u>Malus sylvestris</u> (apple)	Argentina, Azores, Brazil, Costa Rica, Cyprus, Europe (country-?), France, Greece, Hawaii, Israel, Italy, Jordan, Liberia, Malta, Peru, Portugal, South Africa (?), Sierra Leone, Spain, Tunisia, Unknown, Venezuela	200

<u>Pest</u>	<u>Host</u>	<u>Country of Origin</u>	<u>Number of Interceptions</u>
<u>Ceratitis capitata</u> (continued)	<u>Ochrosia elliptica</u> (ochrosia) <u>Opuntia</u> sp. (pricklypear) <u>Passiflora</u> sp. (passionfruit) <u>Persea americana</u> (American avocado) <u>Phoenix dactylifera</u> (date) <u>Prunus armeniaca</u> (apricot) <u>P. domestica</u> (plum) <u>P. persica</u> (peach) <u>Psidium guajava</u> (guava) <u>Punica granatum</u> (pomegranate) <u>Pyrus communis</u> (pear) <u>Terminalia catappa</u> (tropical almond) <u>Vitis</u> sp. (grape)		
<u>Ceroplastes rubens</u> Mask. (Coccidae)	<u>Alyxia olivaeformis</u> (maille) leaf <u>Anthurium andreanum</u> (flamingo anthurium) leaf <u>Anthurium</u> sp. (leaf) <u>Brassaia actinophylla</u> (umbrella tree) leaf Cuttings - unidentified <u>Eucalyptus</u> sp. (leaf) <u>Gardenia jasminoides</u> (gardenia) leaf	American Samoa, Hawaii	49
<u>Chilo suppressalis</u> (Wlk.) (Crambidae)	<u>Oryza sativa</u> (rice) stem Stores	Japan, Korea, Spain	27
<u>Coccus viridis</u> (Green) (Coccidae)	<u>Alpinia purpurata</u> (red ginger) <u>Alyxia olivaeformis</u> (maille) leaf <u>Coccolobis uvifera</u> (common seagrape) <u>Codiaeum variegatum</u> (croton) leaf <u>Coffea arabica</u> (Arabian coffee) leaf <u>Cordyline terminalis</u> (ti) leaf <u>Coriandrum sativum</u> (coriander) leaf <u>Gardenia jasminoides</u> (gardenia) leaf <u>Gerbera</u> sp. (gerbera) leaf <u>Gomphrena globosa</u> (globe amaranth) leaf <u>Mangifera indica</u> (mango) leaf <u>Murraya exotica</u> (jasminorange) leaf <u>Polyscias</u> sp. (panax) leaf	American Samoa, British Virgin Is., Costa Rica, Fiji, Guam, Hawaii, Philippines, Jamaica, Unknown	51

<u>Pest</u>	<u>Host</u>	<u>Country of Origin</u>	<u>Number of Interceptions</u>
<u>Cochicella barbara</u> (L.) (<u>Helicellidae</u>)	<u>Brassica oleracea</u> var. <u>capitata</u> (cabbage) Cargo <u>Lactuca sativa</u> (lettuce) <u>Mentha</u> sp. (mint) Soil with plants: <u>Dianthus caryophyllus</u> , <u>Eriobotrya japonica</u> , and <u>Hibiscus</u> sp.	Algeria, Azores, Europe (country-?), Greece, Morocco, Italy, Portugal, Spain, Tunisia	25
<u>Conotelus mexicanus</u> Murray (<u>Nitidulidae</u>)	Aircraft <u>Chrysanthemum</u> sp. (cut flower) <u>Cordyline terminalis</u> (ti) leaf <u>Coriandrum sativum</u> (coriander) <u>Dianthus caryophyllus</u> (carnation) flower Flowers (mixed) <u>Lactuca sativa</u> (lettuce) <u>Plumeria acuminata</u> (plumeria) flowers <u>P. rubra</u> (red plumeria) flowers <u>Portulaca oleracea</u> (common purslane) <u>Raphanus sativus</u> (radish) <u>Selaginella</u> sp. (plant) <u>Vanda</u> sp. (orchid) flower <u>Zea mays</u> (corn)	Costa Rica, Hawaii, Mexico	90
<u>Conotrachelus aguacatae</u> Barber (<u>Curculionidae</u>)	<u>Persea americana</u> (American avocado) <u>P. americana</u> var. <u>drymifolia</u> (Mexican avocado)	Mexico	26
<u>Cryptoblabes gnidiella</u> (Mill.) (<u>Phycitidae</u>)	<u>Citrus sinensis</u> (sweet orange) <u>Eriobotrya japonica</u> (loquat) <u>Prunus nigra</u> (Canada plum) <u>Psidium guajava</u> (guava) <u>Punica granatum</u> (pomegranate) <u>Vitis</u> sp. (grape)	Europe (country-?), France (?), Greece, Israel, Italy, Malta, Portugal, Spain, United Arab Republic, Unknown	41
<u>Cryptorhynchus mangiferae</u> (F.) (<u>Curculionidae</u>)	Baggage <u>Mangifera indica</u> (mango) seed	Hawaii, India, Philippines	158
<u>Cryptotermes brevis</u> (Walker) (<u>Kalotermitidae</u>)	Baggage (cardboard and wood) Mail Wood crates	Bahamas, Cuba, Hawaii, Unknown	21

<u>Pest</u>	<u>Host</u>	<u>Country of Origin</u>	<u>Number of Interceptions</u>
<u>Curculio elephas</u> (Gyll.) (Curculionidae)	<u>Castanea sativa</u> (European chestnut) <u>Castanea</u> sp. (chestnut)	Azores, Czechoslovakia, France, Greece, Germany, Italy, Poland, Portugal, Spain, Yugoslavia	127
<u>Curculio nucum</u> L. (Curculionidae)	<u>Castanea</u> sp. (chestnut) <u>Corylus avellana</u> (European filbert) <u>Corylus</u> sp. (filbert)	Czechoslovakia, Greece, Italy, Rumania (?), Spain, Yugoslavia	13
<u>Cylas formicarius elegantulus</u> (Sum.) (Curculionidae)	Baggage <u>Ipomoea batatas</u> (sweetpotato) Mail	Cuba, Dominican Republic, Ecuador, Haiti, Hawaii, Honduras, Jamaica, Mexico, Puerto Rico, Virgin Islands	67
<u>Dacus dorsalis</u> Hend. (Tephritidae)	<u>Aleurites</u> sp. (fruit) <u>Averrhoa carambola</u> (star fruit) <u>Carica papaya</u> (papaya) Cargo (papaya containers) <u>Citrus aurantifolia</u> (sweet lime) <u>Litchi chinensis</u> (lychee) <u>Mangifera indica</u> (mango) <u>Musa</u> sp. (banana) <u>Passiflora</u> sp. (passionfruit) <u>Persea americana</u> (American avocado) <u>Psidium guajava</u> (guava) <u>Terminalia catappa</u> (tropical almond)	Hawaii, Japan	40
<u>Dacus oleae</u> (Cmel.) (Tephritidae)	<u>Olea europaea</u> (common olive)	Cyprus, Greece, Hungary, Iran, Italy, Jordan, Lebanon, Unknown	86
<u>Dialeurodes kirkaldyi</u> (Kot.) (Aleyrodidae)	<u>Gardenia jasminoides</u> (cut flower) leaf <u>Gardenia taitensis</u> (cut flower) leaf <u>Jasminum sambac</u> (jasmine plant) leaf Plant - unidentified leaf <u>Plumeria</u> sp. (cutting) leaf <u>Thunbergia</u> sp. (clockvine)	Hawaii, Hong Kong, Japan, Philippines, Turkey	14
<u>Diocalandra taitensis</u> (Guer.) (Curculionidae)	Baggage <u>Cocos nucifera</u> (coconut)	Hawaii	15
<u>Dysmicoccus neobrevipes</u> Beardsley (Pseudococcidae)	<u>Alpinia purpurata</u> (red ginger) flower <u>Annona squamosa</u> (sugar- apple) <u>Annona</u> sp. (fruit) <u>Artocarpus altilis</u> (breadfruit) <u>Carica papaya</u> (papaya) <u>Diospyros kaki</u> (kaki persimmon) <u>Heliconia</u> sp. (plant) <u>Musa</u> sp. (banana)	Asia (country-?), Canal Zone, Haiti, Hawaii, Japan, Philippines	12

<u>Pest</u>	<u>Host</u>	<u>Country of Origin</u>	<u>Number of Interceptions</u>
<u>Dyspessa ulula</u> (Bkh.) (Cossidae)	<u>Allium sativum</u> (garlic)	Italy, Portugal, Spain	21
<u>Euscepes postfasciatus</u> (Fairm.) (Curculionidae)	<u>Brassica rapa</u> (turnip) <u>Ipomoea batatas</u> (sweetpotato) Mail <u>Physalis</u> sp. (husk tomato) <u>Zingiber officinale</u> (ginger root)	Antigua, Brazil, British V. I., British West Indies, Hawaii, Mexico, Puerto Rico, Surinam, Trinidad, St. Vincent	14
<u>Filippia viburni</u> (Sign.) (Coccidae)	<u>Hedera helix</u> (English ivy) leaf	England, Unknown	13
<u>Frankliniella formosae</u> Moulton (Thripidae)	<u>Chrysanthemum</u> sp. (plant in soil) <u>Diospyros kaki</u> (kaki persimmon) Flowers: (<u>Callistephus chinensis</u> , <u>Chrysanthemum</u> sp., <u>Dianthus caryophyllus</u> , <u>Gardenia</u> sp., <u>Gladiolus</u> sp., <u>Rosa</u> sp., and unidentified Flowers) cut <u>Hedychium coronarium</u> (common gingerlily) leaf	Asia (country-?), Japan, Korea, Yugoslavia	141
<u>Frankliniella intonsa</u> (Trybom) (Thripidae)	Flowers: (<u>Aster</u> sp., <u>Callistephus</u> <u>chinensis</u> , <u>Calluna</u> <u>vulgaris</u> , <u>Chrysanthemum</u> sp., <u>Dahlia</u> sp., <u>Dianthus</u> <u>caryophyllus</u> , <u>Gladiolus</u> sp., <u>Lathyrus odoratus</u> , <u>Lavandula</u> sp., <u>Paeonia</u> sp., <u>Rosa</u> sp., and unidentified flowers) cut	Denmark, England, Europe (country-?), France, Germany, Hungary, Italy, Netherlands, Poland, Sweden, Switzerland, Unknown	18
<u>Furcaspis oceanica</u> Ldgr. (Diaspididae)	<u>Cocos nucifera</u> (coconut)	Guam, Kwajalein, Philippines, Unknown	48
<u>Helicella caperata</u> (Montagu) (Helicellidae)	<u>Apium graveolens</u> var. <u>dulce</u> (celery) Cargo <u>Cynara cardunculus</u> (cardoon) <u>Cynara scolymus</u> (artichoke) Debris <u>Petroselinum crispum</u> var. <u>latifolium</u> (parsley) <u>Pisum sativum</u> (dried peas) Plant - unidentified <u>Sesamum indicum</u> (sesame) seed Stores	France, Greece (?), Italy, Libya, Turkey, Spain, Unknown	24
<u>Helicella cretica</u> (Fer.) (Helicellidae)	<u>Allium porrum</u> (leek) Cargo Stores	Crete, Greece, Italy, Turkey	14
<u>Helicella derbentina</u> (Andrz.) (Helicellidae)	Cargo	Turkey	14

<u>Pest</u>	<u>Host</u>	<u>Country of Origin</u>	<u>Number of Interceptions</u>
<u>Helicella itala</u> (L.) (<u>Helicellidae</u>)	Baggage <u>Brassica oleracea</u> var. <u>botrytis</u> (cauliflower) Cargo <u>Lavendula</u> sp. (plant)	France, Italy	11
<u>Helicella maritima</u> (Drap.) (<u>Helicellidae</u>)	<u>Allium sativum</u> (garlic) Baggage <u>Brassica chinensis</u> (Chinese cabbage) <u>Brassica oleracea</u> var. <u>capitata</u> (cabbage) Cargo Cargo hold <u>Lactuca sativa</u> (lettuce) Railroad car Stores	Crete, Greece, Italy, Spain, Turkey, Yugoslavia	12
<u>Helicina zephyrina</u> Duclos (<u>Helicinidae</u>)	Bromeliad (plant) <u>Chamaedorea elegans</u> (palm) leaf <u>Chamaedorea</u> sp. (palm) leaf Orchid (plant) Palm (leaf)	Mexico	19
<u>Helix aperta</u> Born (<u>Helicidae</u>)	Baggage <u>Brassica oleracea</u> var. <u>capitata</u> (cabbage) Cargo <u>Daucus carota</u> var. <u>sativa</u> (garden carrot) Mail Railroad car Soil Stores	Greece, Europe (country-?), Italy, Libya, Spain	19
<u>Helix aspersa</u> Muller (<u>Helicidae</u>)	Automobile Baggage Beta sp. (beet) <u>Brassica oleracea</u> var. <u>botrytis</u> (cauliflower) <u>B. oleracea</u> var. <u>capitata</u> (cabbage) Cargo <u>Citrus sinensis</u> (sweet orange) <u>Lactuca sativa</u> (lettuce) <u>Lilium longiflorum</u> (Easter lily) cut flowers Orchid (plant) <u>Pelargonium</u> sp. (geranium) cutting Plant - unidentified Soil Stores	Algeria, Azores, Belgium, Europe (country-?), Costa Rica, France, Greece, Israel, Italy, Mexico, Peru, Portugal, Spain, Turkey, United Kingdom, Unknown	35

<u>Pest</u>	<u>Host</u>	<u>Country of Origin</u>	<u>Number of Interceptions</u>
<u>Heterobostrychus aequalis</u> (Waterh.) (Bostrichidae)	Aircraft Cargo Debris (in ship's hold) Quarters (of ship) Packing material Wood	Asia (country-?), India, Japan, Okinawa, Philippines, Thailand, Vietnam, West Pacific, Unknown	40
<u>Homalodisca ichthyocephala</u> (Signoret) (Cicadellidae)	<u>Cucumis melo</u> var. cantalupensis (cantaloup) Railroad car	Mexico	14
<u>Hypothenemus hampei</u> (Ferr.) (Scolytidae)	<u>Coffea arabica</u> (Arabian coffee) seed <u>C. canephora</u> (robust coffee) seed <u>Coffea</u> sp. (coffee) bean	Africa, Angola, Brazil, Cameroon, Ethiopia, Guinea, India, Indonesia, Ivory Coast, Kenya, Liberia, Libya, Mexico, Nigeria, Sudan, Yemen, Unknown	68
<u>Laspeyresia splendana</u> (Hbn.) (Olethreutidae)	<u>Castanea sativa</u> (European chestnut) seed <u>Castanea</u> sp. (chestnut) seed <u>Quercus</u> sp. (oak) seed	Austria, Azores, Europe, France, Germany, Greece, Hungary, Italy, Portugal, Spain	88
<u>Laspeyresia strobilella</u> (L.) (Olethreutidae)	<u>Abies</u> sp. (fir) cone <u>Picea</u> sp. (spruce) cone <u>Pinus</u> sp. (pine) cone	Austria, Denmark, Europe, Germany, Italy, Sweden	20
<u>Lepidosaphes conchiformioides</u> Borchs. (Diaspididae)	<u>Diospyros kaki</u> (Kaki persimmon) <u>Diospyros</u> sp. (persimmon)	Japan, Formosa	42
<u>Lepidosaphes esakii</u> Tak. (Diaspididae)	<u>Cocos nucifera</u> (coconut)	Eniwetok, Kwajalein	18
<u>Lepidosaphes tobionis</u> (Kuw.) (Diaspididae)	<u>Codiaeum variegatum</u> (leafcrotton) leaf <u>Codiaeum</u> sp. (crotton) leaf	Hawaii, Philippines, Puerto Rico	15
<u>Liogenys macropelma</u> Bates (Scarabaeidae)	Aircraft	Brazil, Canal Zone, El Salvador, Panama, Unknown	57
<u>Mamestra brassicae</u> (L.) (Noctuidae)	Aircraft <u>Apium graveolens</u> var. <u>dulce</u> (celery) Baggage <u>Brassica chinensis</u> (Chinese cabbage) <u>B. oleracea</u> var. <u>botrytis</u> (cauliflower) <u>B. oleracea</u> var. <u>capitata</u> (cabbage) <u>Brassica</u> sp. (leaf) <u>Capsicum annuum</u> (pepper) <u>Cichorium endiva</u> (endive) leaf Flowers (mixed) <u>Pelargonium</u> sp. (geranium) leaf	Asia (country-?), Belgium, England, France, Germany, Israel, Italy, Japan, Netherlands	42

<u>Pest</u>	<u>Host</u>	<u>Country of Origin</u>	<u>Number of Interceptions</u>
<u>Maruca testulalis</u> (Geyer) (Pyraustidae)	Baggage <u>Canavalia cathartica</u> (mauna loa) flower <u>Cajanus cajan</u> (pigeonpea) pod Flowers (various) Fruit (various) Mail <u>Phaseolus lunatus</u> (lima beans) <u>P. vulgaris</u> cv. (string bean) pod <u>Phaseolus</u> sp. (bean) <u>Sesbania grandiflora</u> (Agati sesbania) cut flower <u>Vigna sesquipedalis</u> (yardlong cowpea) pod	Dominican Republic, Ecuador, Hawaii, Jamaica, Panama, Philippines, Puerto Rico, Trinidad	45
<u>Matsumuraes phaseoli</u> (Mats.) (Olethreutidae)	<u>Canavalia ensiformis</u> (horse bean) <u>Phaseolus vulgaris</u> (kidney bean) <u>P. vulgaris</u> cv. (string bean) <u>Phaseolus</u> sp. (bean) pod <u>Vicia faba</u> (faba bean) pod	Japan	15
<u>Melanaspis aliena</u> (Newst.) (Diaspididae)	<u>Cattleya guatemalensis</u> (orchid plant) leaf <u>C. skinneri</u> (orchid plant) leaf <u>Cattleya</u> sp. (orchid plant) leaf <u>Oncidium</u> sp. (orchid plant) leaf Orchid (plant) leaf	El Salvador, Canal Zone, Costa Rica, Guatemala, Panama, Honduras	12
<u>Minthea rugicollis</u> (Walker) (Lyctidae)	<u>Bambusa</u> sp. (bamboo) Herbs Wood - unidentified	Hong Kong, India, Japan, Tanzania, Vietnam	12
<u>Monacha carthusiana</u> (Muller) (Helicellidae)	<u>Brassica oleracea</u> var. botrytis (cauliflower) Cargo <u>Lycopersicon esculentum</u> (tomato)	France, Italy, Spain, Turkey	11
<u>Morganella longispina</u> (Morg.) (Diaspididae)	<u>Citrus grandis</u> (pummelo) <u>C. paradisi</u> (grapefruit) <u>C. reticulata</u> cv. (cultivar orange) <u>C. sinensis</u> (sweet orange) <u>Citrus</u> sp. (peel) <u>Nerium oleander</u> (oleander) stem	American Samoa, Bahamas, Brazil, Hawaii, Hong Kong, Japan, Tahiti	24

<u>Pest</u>	<u>Host</u>	<u>Country of Origin</u>	<u>Number of Interceptions</u>
<u>Mycetaspis personata</u> (Comstock) (Diaspididae)	<u>Citrus aurantifolia</u> (lime) <u>C. paradisi</u> (grapefruit) <u>C. sinensis</u> (sweet orange) <u>Eucalyptus</u> sp. (leaf) <u>Persea americana</u> (American avocado) <u>Pimenta dioica</u> (allspice) <u>P. racemosa</u> (bayrumtree) <u>Yucca</u> sp. (plant)	Brazil, British West Indies, Columbia, France, Grenada, Guatemala, Mexico, South Africa, Unknown	20
<u>Neoleucinodes elegantalis</u> (Guen.) (Pyraustidae)	<u>Capsicum annuum</u> (pepper) <u>Lycopersicon esculentum</u> (tomato) Plant - unidentified <u>Solanum integrifolium</u> (Ethiopian eggplant) <u>S. melongena</u> (eggplant) <u>S. quitoense</u> ("naranjilla")	Brazil, Columbia, Ecuador, France (?), Panama, Puerto Rico, Venezuela	12
<u>Nephotettix impicticeps</u> Ishihara (Cicadellidae)	Aircraft Cargo	Asia (country-?), India, Japan, Midway, Thailand	18
<u>Nilaparvata lugens</u> (Stal) (Delphacidae)	Aircraft	Asia (country-?), Unknown	14
<u>Orchidophilus aterrimus</u> (Waterh.) (Curculionidae)	<u>Dendrobium</u> sp. (orchid) cut flower Flowers (mixed) Mail Orchid (cut flower) <u>Vanda</u> sp. (orchid) cut flowers and plants	Hawaii	32
<u>Otala vermiculata</u> (Muller) (Helicidae)	Automobile Baggage <u>Brassica oleracea</u> var. <u>botrytis</u> (cauliflower) Cargo Railroad car Ship (in hold) Soil <u>Solanum tuberosum</u> (potato) Stores	France, Greece, Israel, Italy, Poland (?), Turkey, Yugoslavia, Unknown	39
<u>Pagiocerus frontalis</u> (F.) (Scolytidae)	<u>Ananas comosus</u> (pineapple) <u>Zea mays</u> (dry corn) seed	Colombia, Costa Rica, Ecuador, Mexico, Peru	30
<u>Palmicultor palmarum</u> (Ehrh.) (Pseudococcidae)	<u>Cocos nucifera</u> (coconut) leaf <u>Coffea arabica</u> (Arabian coffee) leaf	Hawaii, Kwajalein, Mariana Islands	19

<u>Pest</u>	<u>Host</u>	<u>Country of Origin</u>	<u>Number of Interceptions</u>
<u>Palpita unionalis</u> (Hbn.) (Pyraustidae)	Flowers (mixed) <u>Jasminum sambac</u> (Jasmine) flowers	Okinawa, Thailand	15
<u>Parlatoria cinerea</u> Hadden (Diaspididae)	<u>Citrus aurantifolia</u> (lime) <u>C. grandis</u> (pummelo) <u>C. limon</u> (lemon) <u>C. medica</u> (citron) <u>C. paradisi</u> (grapefruit) <u>C. reticulata</u> cv. (cultivar orange) <u>C. sinensis</u> (sweet orange)	Argentina, Brazil, Europe (country-?), France, Formosa, Guatemala, Israel, Japan, Mexico, South Africa, Spain, Tahiti, Trinidad, Unknown	76
<u>Parlatoria zizyphus</u> (Lucas) (Diaspididae)	<u>Citrus aurantifolia</u> (lime) <u>C. aurantium</u> (sour orange) <u>C. grandis</u> (pummelo) <u>C. limon</u> (lemon) <u>C. mitis</u> (calamondin orange) <u>C. paradisi</u> (grapefruit) <u>C. reticulata</u> cv. (cultivar orange) <u>C. sinensis</u> (sweet orange) <u>Citrus</u> sp. (dried peel and leaves) <u>Fortunella japonica</u> (kumquat) Leaves - unidentified	Argentina, China, Dominican Republic, Egypt, Europe (country-?), Formosa, France, Greece, Guiana, Haiti, Hawaii, Hong Kong, Indonesia, Iran, Italy, Jamaica, Japan, Malta, Panama (?), Hawaii, Spain, Tahiti, Thailand, United Arab Republic, Vietnam, Yugoslavia, Unknown	207
<u>Pectinophora gossypiella</u> (Saund.) (Gelechiidae)	Cargo Fruit - unidentified <u>Gossypium herbaceum</u> (Levant cotton) seed <u>Gossypium</u> sp. (cotton) <u>Hibiscus esculentus</u> (okra) <u>H. mutabilis</u> (cotton rose hibiscus)	Antigua, British V.I., British W. Indies, Dominican Republic, Greece, Hawaii, Haiti, Italy, Jamaica, Rhodesia, Mexico, Pakistan, St. Martin, Trinidad, West Indies, Venezuela, Virgin Is.	104
<u>Pentalonia nigronervosa</u> (Coq.) (Aphididae)	<u>Alpinia purpurata</u> (red ginger) flower <u>Phaeomeria magnifica</u> (torch ginger) leaf and stem <u>Plumeria</u> sp. (cut flower)	Guam, Hawaii, Jamaica, Philippines	66
<u>Pheidole megacephala</u> (Fabricius) (Formicidae)	<u>Ananas comosus</u> (pineapple) Baggage Bromeliad (plant) Cargo <u>Coffea arabica</u> (Arabian coffee) <u>Cibotium</u> sp. (fern) Flowers (mixed) <u>Garcinia mangostana</u> (mangosteen) <u>Hylocereus undatus</u> (nightblooming-cereus) flower Orchid (plant) <u>Oryza sativa</u> (rice straw) <u>Ricinus communis</u> (castorbean) pod Plants - various Wood (log) - unidentified	Beef Island, Cuba, Dominican Republic, Hawaii, Honduras, Jamaica, Japan, New Guinea, Panama, Thailand, Vietnam	26

<u>Pest</u>	<u>Host</u>	<u>Country of Origin</u>	<u>Number of Interceptions</u>
<u>Phlyctinus callosus</u> Boh. (Curculionidae)	<u>Vitis</u> sp. (grape)	South Africa	28
<u>Pieris brassicae</u> (L.) (Pieridae)	Aircraft <u>Brassica oleracea</u> var. <u>botrytis</u> (cauliflower) <u>B. oleracea</u> var. <u>capitata</u> (cabbage) Cargo	Denmark, France, Italy, Pakistan, Spain, Turkey	10
<u>Pityogenes chalcographus</u> (L.) (Scolytidae)	<u>Pinus</u> sp. (pine) bark and wood Wood - unidentified	Denmark, Europe (country-?), Germany, Netherlands, Norway, Poland, Sweden	23
<u>Planococcus lilacinus</u> (Ckll.) (Pseudococcidae)	<u>Alpinia purpurata</u> (red ginger) flowers <u>Annona squamosa</u> (sugar- apple) <u>Diospyros</u> sp. (persimmon) <u>Garcinia mangostana</u> (mangosteen) <u>Lansium domesticum</u> (langsat) <u>Nephelium lappaceum</u> (rambutan)	Asia (country-?), Formosa, Japan, Philippines, Vietnam, West Pacific	16
<u>Popillia japonica</u> Newman (Scarabaeidae)	Aircraft Cargo Quarters (of ship)	Asia (country-?), Japan	17
<u>Popillia lewisi</u> Arrow (Scarabaeidae)	Aircraft Baggage Cargo	Asia (country-?), Japan, Okinawa	25
<u>Prays oleella</u> (Fab.) (Yponomeutidae)	<u>Olea europaea</u> (olive)	Greece, Italy, Lebanon	10
<u>Pseudaonidia trilobitiformis</u> (Green) (Diaspididae)	<u>Citrus aurantifolia</u> (lime) <u>C. grandis</u> (pummelo) <u>C. limon</u> (lemon) <u>C. reticulata</u> cv. (cultivar orange) <u>C. sinensis</u> (sweet orange) <u>Mangifera indica</u> (mango) <u>Nerium oleander</u> (common oleander) <u>Spondias</u> sp. (mombin) <u>Theobroma cacao</u> (cocoa) leaf	Barbados, Brazil, China, Colombia, Formosa, Panama, Philippines, St. Lucia, Venezuela, Vietnam	16
<u>Rhagoletis cerasi</u> (L.) (Tephritidae)	<u>Prunus avium</u> (mazzard cherry) <u>P. cerasus</u> (sour cherry) <u>P. serotina</u> (black cherry) <u>Prunus</u> sp. (cherry)	Austria (?), Azores, Belgium, Czechoslovakia, England, Europe (country-?), France, Germany, Greece, Hungary, Israel, Italy, Luxembourg, Norway, Poland, Rumania, Spain, Switzerland, Turkey, Yugoslavia, Unknown	34

<u>Pest</u>	<u>Host</u>	<u>Country of Origin</u>	<u>Number of Interceptions</u>
<u>Scotinophara lurida</u> (Burm.) (Pentatomidae)	Aircraft	Asia (country-?), Japan, Okinawa, Thailand	10
<u>Silba virescens</u> Macquart (Lonchaeidae)	<u>Ficus carica</u> (fig)	France, Italy, Spain	12
<u>Sinoxylon conigerum</u> Gerst. (Bostrichidae)	Aircraft Baggage <u>Bambusa</u> sp. (bamboo) Wood (crates)	Ceylon, Hawaii, India, Vietnam, West Pacific, Unknown	28
<u>Spodoptera litura</u> (F.) (Noctuidae)	Aircraft Cargo	Asia (country-?), Guam, Japan, Midway, Okinawa, Philippines, Vietnam, W. Pacific	39
<u>Spodoptera mauritia acronyctoides</u> (Guen.) (Noctuidae)	Aircraft Cargo	Asia (country-?), Japan, Midway, Wake Island, Unknown	21
<u>Spodoptera pecten</u> Guen. (Noctuidae)	Aircraft	Asia (country-?), Japan (?), Midway, Orient, Unknown	13
<u>Stenoma catenifer</u> Wlsm. (Stenomidae)	<u>Persea americana</u> (American avocado) <u>P. americana</u> var. <u>drymifolia</u> (Mexican avocado) <u>Persea</u> sp. (avocado)	Canal Zone, Colombia, Dominican Republic, Guatemala, Ecuador, El Salvador, Mexico, Panama, Peru, Venezuela	69
<u>Symmetaischema capisicum</u> (B. & P.) (Gelechiidae)	<u>Cajanus cajan</u> (pigeonpea) <u>Capsicum annuum</u> (pepper)	Bolivia, Dominican Republic, Guatemala, Mexico, Nicaragua, Peru	23
<u>Taeniothrips atratus</u> (Haliday) (Thripidae)	<u>Cucurbita</u> sp. (squash) Flowers: <u>Calluna vulgaris</u> , <u>Delphinium</u> sp., <u>Dianthus caryophyllus</u> , <u>Gladiolus</u> sp., <u>Lathyrus odoratus</u> , <u>Lavandula</u> sp., <u>Ornithogalum thyrsoides</u> , <u>Rosa</u> sp., and mixed cut flowers) Nursery stock <u>Pimpinella anisuum</u> (anise) Stores	Canada, Denmark, England, Europe (country-?), Finland, Germany, Ireland, Italy, Netherlands, Poland, Scotland, Unknown	35
<u>Taeniothrips hawaiiensis</u> (Morgan) (Thripidae)	Flowers: <u>(Canavalia cathartica</u> , <u>Cattleya</u> sp., <u>Chrysanthemum</u> sp., <u>Dianthus caryophyllus</u> , <u>Fragaria berteriana</u> , <u>Gardenia jasminoides</u> , <u>Jasminum sambac</u> , <u>Narcissus</u> sp., <u>Plumeria acuminata</u> , <u>P. rubra</u> , <u>Plumeria</u> sp., <u>Pollanthes tuberosa</u> , <u>Rosa</u> sp., and mixed cut flowers)	Asia (country-?), Guam, Japan, Hawaii	203

<u>Pest</u>	<u>Host</u>	<u>Country of Origin</u>	<u>Number of Interceptions</u>
<u>Tenuipalpus japonicus</u> Nishio (Tenuipalpidae)	<u>Diospyros kaki</u> (kaki persimmon)	Japan	12
<u>Tetranychus viennensis</u> Zacher (Tetranychidae)	<u>Malus sylvestris</u> (apple)	Denmark, Iceland, Japan, Hungary, Korea, Philippines, Russia, Yugoslavia, Unknown	93
<u>Theba pisana</u> (Muller) (Helicidae)	<u>Apium graveolens</u> var. <u>dulce</u> (celery) Baggage <u>Brassica oleracea</u> var. <u>capitata</u> (cabbage) Cargo <u>Citrus</u> sp. (leaf of branch) <u>Daucus carota</u> var. <u>sativa</u> (carrot) <u>Lactuca sativa</u> (lettuce) <u>Lycopersicon esculentum</u> (tomato) <u>Mimosa</u> sp. (plant) <u>Petroselinum crispum</u> var. <u>latifolium</u> (parsley) <u>Statice</u> sp. (cut flowers) Stores <u>Vicia faba</u> (faba bean) <u>Vigna</u> sp. (cowpea)	France, Europe (country-?), 59 Germany, Greece, Israel, Italy, Libya, Morocco, Portugal, Spain, Turkey, Yugoslavia (?), Unknown	
<u>Thrips major</u> Uzel (Thripidae)	Flowers: (<u>Chrysanthemum</u> sp., <u>Dianthus caryophyllus</u> , <u>Erica</u> sp., <u>Lavandula</u> sp., <u>Rosa</u> sp., and mixed cut flowers)	Denmark, England, Europe (country-?), France, Scotland, Sweden	14
<u>Trogoderma granarium</u> Everts (Dermestidae)	<u>Acacia senegal</u> (gum arabic and gum hashabi) <u>Acacia</u> sp. (gum talha) <u>Anethum graveolens</u> (dill) seed <u>Anogeissus latifolia</u> (gum ghatti) <u>Apium graveolens</u> var. <u>dulce</u> (celery) seed <u>Arachis hypogaea</u> (peanuts) Bagging: (Used burlap bagging and wrappers on cocoa beans, coriander, flax waste, pigeonpeas, rugs, sesame seed, and wool) Cargo: (At large with beeswax, cinnamon quills, canvas, cotton piece goods, gall nuts, goat skins, miscellaneous foodstuffs, plastic, sheep skins, steel beams, wooden crates, and wool)	Afghanistan, Africa (country-?), Belgium, Ceylon, Denmark, England, Formosa, Germany, Hong Kong, Lebanon, Netherlands, Malaysia, India, Indonesia, Iran, Iraq, Israel, Italy, Ivory Coast, Japan, Jordan, Kuwait, Nigeria, Pakistan, Sudan, Syria, United Arab Republic, West Africa (country-?), Senegal, Unknown	503

<u>Pest</u>	<u>Host</u>	<u>Country of Origin</u>	<u>Number of Interceptions</u>
<u>Trogoderma granarium</u> (continued)	Cargo hold: (At large with debris, and under rust and paint scales) <u>Cajanus cajan</u> (pigeonpea) seed <u>Cassia</u> sp. (senna) pod <u>Cephalaria</u> sp. (seed) <u>Cicer arictinum</u> (chickpea) seed <u>Citrus aurantifolia</u> (lime) dried peel <u>Coffea arabica</u> (Arabian coffee) <u>Coriandrum sativum</u> (coriander) seed <u>Cuminum cyminum</u> (cumin) seed <u>Cucumis</u> sp. (melon) seeds <u>Cyamopsis tetragonoloba</u> (guar gum) Debris (in hold and storeroom) <u>Foeniculum vulgare</u> (fennel) seed Grain (Residue in hold) <u>Lens culinaris</u> (lentils) <u>Oryza sativa</u> (rice) seed <u>Piper nigrum</u> (black pepper) <u>Pisum sativum</u> (pea) <u>Pistacia</u> sp. (pistache) nuts Seeds (Unidentified) <u>Sesamum indicum</u> (oriental sesame) seed <u>Sterculia urens</u> (gum karaya) Stores (storeroom with dry stores) <u>Terminalia catappa</u> (tropical almond) <u>Trigonella foenum-graecum</u> (fenugreek) <u>Triticum aestivum</u> (wheat)		
<u>Tryporyza incertulas</u> (Wlk.) (Schoenobiidae)	Aircraft	Asia (country-?), Japan, Midway, Okinawa, Wake Island, Unknown	30
<u>Unaspis yanonensis</u> (Kuw.) (Diaspididae)	<u>Citrus aurantifolia</u> (lime) <u>C. aurantium</u> (sour orange) <u>C. grandis</u> (pummelo) <u>C. limon</u> (lemon) <u>C. medica</u> (citron) <u>C. paradisi</u> (grapefruit) <u>C. reticulata</u> cv. (cultivar orange) <u>C. sinensis</u> (sweet orange) <u>Citrus</u> sp. (fruit)	Australia, Formosa, Hong Kong, Israel, Japan, Okinawa, Philippines, Ryukyu Islands (Kadena), Vietnam, Unknown	753
<u>Vinsonia stellifera</u> (Westw.) (Coccidae)	<u>Anthurium</u> sp. (leaf) <u>Brassavola cordata</u> (orchid) leaf <u>Broughtonia</u> sp. (orchid) leaf <u>Cattleya</u> sp. (orchid) leaf of plant <u>Cinnamomum</u> sp. (cinnamon) leaf <u>Citrus</u> sp. (leaf) <u>Ixora</u> sp. (leaf) <u>Ligustrum</u> sp. (privet) leaf <u>Mangifera indica</u> (mango) leaf <u>Oncidium</u> sp. (orchid) plant Orchid (plant) leaf <u>Phalaenopsis</u> sp. (orchid) plant	Am. Virgin Islands, Barbados, Canal Zone, Costa Rica, Dominican Republic, Grenada, Guatemala, Haiti, Honduras, Jamaica, Martinique, Nicaragua, Panama, Puerto Rico, Thailand, Trinidad, Venezuela	61

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Cooperative ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

All reports and inquiries pertaining to this release, including the mailing list, should be sent to:

Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG damage heavy on wheat in Motley and Knox Counties, Texas. (p. 1137).

A LEAF ROLLER MOTH at epidemic levels on about 10,000 acres of citrus in Kern, Fresno, and Tulare Counties, California. (p. 1138).

JEFFREY PINE BEETLE killing Jeffrey pines in San Bernardino National Forest of California. (p. 1139).

WINTER TICK very heavy on cattle in Payne and Noble Counties, Oklahoma. (p. 1140).

Detection

New State records include 3 grasshoppers in Oregon (p. 1142), HOLLYHOCK WEEVIL in Wyoming, and an APHID in Mississippi (p. 1139).

For new county record see page 1142.

Special Report

Insects Not Known to Occur in the United States

FLAT RED MITE (Cenopalpus pulcher (Canestrini and Fanzago)). (pp. 1143-1144).

Reports in this issue are for week ending December 13 unless otherwise indicated.

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WEATHER BUREAU'S 30-DAY OUTLOOK

MID-DECEMBER 1968 to MID-JANUARY 1969

The Weather Bureau's 30-day outlook calls for temperatures to average below seasonal normals in the southeastern quarter of the Nation, the Middle Atlantic Coast States, and also the Pacific Coast States. Above normal temperatures are indicated for northern New England, the northern Great Lakes, and the southern Plains. Elsewhere near normal averages with large fluctuations are in prospect. Precipitation is expected to exceed normal in the Midwest, Lake region, and Northeast where snows will be frequent, as well as over the Pacific Northwest. Subnormal amounts are predicted for the southern Plateau, southern Plains, and the South Atlantic States. Elsewhere near normal amounts are indicated.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$5.00 a year.

WEATHER OF THE WEEK ENDING DECEMBER 16

HIGHLIGHTS: An intense storm paraded across the northern half of the Nation, preceded by balmy weather, accompanied by blustering winds and driving snow, and followed by biting cold. As the storm made its exit via the St. Lawrence River, another in the procession of winter storms entered the Pacific Northwest.

PRECIPITATION: Rains continued along the northern Pacific coast with snow in the mountains. Winds along the coast reached hurricane force on Tuesday, gusting to 105 m.p.h. at Cape Blanco, Oregon. Snow accumulated to 1.10 inches above 5,500 feet in the Cascades. As the storm moved inland, it dumped heavy snow in the northern and central Rockies and the Great Plains. Nine inches of snow fell at Salt Lake City, Utah, on Wednesday afternoon and evening. The snow Weather of the Week continued on page 1142.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

GREENBUG (*Schizaphis graminum*) - NEW MEXICO - Mostly light, 0-2 per row foot, in wheat in Curry County. Averaged 6-15 per row foot in barley in Chaves County. (Mathews). TEXAS - Survey conducted November 19-27 in 16 panhandle counties. Maximum counts per row foot in wheat by county: Hartley 5, Dallam 5, Sherman 10, Roberts 10, Ochiltree 40, Lipscomb 100, Hemphill 30, Gray 30, Carson 50, Hutchinson 5, Hansford 20, Moore 40, Armstrong 20, Donley 20, Childress 20, and Collingsworth 40. (Daniels). Generally light on small grains in panhandle area and in Rolling Plains counties of Hardeman, Cottle, and King December 6-13. Damage light in Childress County; some damage in southwestern Foard County. Damage heavy in Motley and Knox Counties; controls in progress in some fields. (Boring). OKLAHOMA - Counts per row foot in wheat by county: Kingfisher 6-80, Garfield 20-80, Major 10-12 in east and 25-35 in west, Jackson 3-9, Tillman 15, Kiowa 5, and Grady 5. (Okla. Coop. Sur.). ARKANSAS - Survey continues negative in northwest area. No further infestations in east-central area. No buildup expected with current cool to cold weather. (Boyer). KANSAS - Trace, 0-2 per row foot, in wheat in Dickinson, Marion, Harvey, Sedgwick, Sumner, and Butler Counties. (Simpson).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - ARIZONA - Averaged 400 per 100 sweeps in alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.). ARKANSAS - Survey negative in northwest area. (Boyer). KANSAS - Surveys negative in alfalfa in Sedgwick, Sumner, and Butler Counties. (Simpson).

TOBACCO BUDWORM (*Heliothis virescens*) - CALIFORNIA - Larvae medium, mining in tangerine fruit at Auburn, Placer County. (Cal. Coop. Rpt.).

CORN, SORGHUM, SUGARCANE

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - KANSAS - Percent stalk infestations in corn by county: Pawnee 64-96, Edwards 76-92, Elk 24-64, Wilson 32-84, Woodson 12-28, Greenwood 8-12, Neosho 8-28, and Allen 4-20. (Redding).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - KANSAS - Infestations ranged 4-30 percent in corn in Neosho, Allen, and Woodson Counties. (Redding).

WESTERN CORN ROOTWORM (*Diabrotica virgifera*) - MISSOURI - Adults collected on corn at California, Moniteau County, July 27 by M. Rohrbach for a new county record. (Munson).

RUSTY PLUM APHID (*Hysteroneura setariae*) - CALIFORNIA - Heavy on 5 acres of sorghum at Holtville, Imperial County. (Cal. Coop. Rpt.).

SMALL GRAINS

WINTER GRAIN MITE (*Pentthaleus major*) - OKLAHOMA - Counts per row foot ranged 0-15 in wheat in western Garfield and eastern Major Counties and 0-20 in Jackson County. (Okla. Coop. Sur.). KANSAS - Ranged 8-25 per row foot in wheat in Sedgwick, Sumner, and Butler Counties. (Simpson).

ENGLISH GRAIN APHID (*Macrosiphum avenae*) - OKLAHOMA - Ranged 0-6 per row foot in wheat in Kingfisher and Garfield Counties. (Okla. Coop. Sur.).

TURF, PASTURES, RANGELAND

A MARCH FLY (*Dilophus orbatus*) - CALIFORNIA - Adults heavy on Bermuda grass lawns at Bakersfield, Kern County. Nuisance in many locations this fall. (Cal. Coop. Rpt.).

FORAGE LEGUMES

PEA APHID (*Acyrtosiphon pisum*) - KANSAS - Ranged 0-12 per square foot in established alfalfa in Sedgwick, Sumner, and Butler Counties. (Simpson). ARIZONA - Light, 20 per 100 sweeps, in alfalfa in Yuma County. (Ariz. Coop. Sur.).

COWPEA APHID (*Aphis craccivora*) - ARIZONA - Averaged 30 per 100 sweeps in alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Averaged 70 per 100 sweeps in alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Averaged 60 per 100 sweeps in alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.).

BEE T ARMYWORM (*Spodoptera exigua*) - ARIZONA - Decreased to 12 per 100 sweeps in alfalfa at Yuma, Yuma County. (Ariz. Coop. Sur.).

ALFALFA WEEVIL (*Hypera postica*) - MISSISSIPPI - No larvae found in alfalfa in Oktibbeha County: 2 adults noted in three one-square-foot samples. (Dinkins, Dec. 6).

A TARSONEMID MITE (*Tarsonemus setifer*) - CALIFORNIA - Heavy on alfalfa at Calexico, Imperial County. (Cal. Coop. Rpt.).

GENERAL VEGETABLES

CABBAGE LOOPER (*Trichoplusia ni*) - ARIZONA - Egg laying and hatching on lettuce reduced by cooler weather at Yuma, Yuma County. (Ariz. Coop. Sur.).

DECIDUOUS FRUITS AND NUTS

LESSER PEACH TREE BORER (*Synanthedon pictipes*) - MISSISSIPPI - Heavy in peach orchard in Oktibbeha County: infestation about 90-100 percent. Larvae averaged 4 per tree in 5 trees examined. (Dinkins, Dec. 6).

A SCARAB (*Plecocomia crinita*) - OREGON - Flights apparently ended in Hood River Valley, Hood River County. Very few specimens taken in light traps this week. Some "stragglers" may occur as late as February. (Zwick).

CITRUS

A LEAF ROLLER MOTH (*Platynota stultana*) - CALIFORNIA - Epidemic, 2-10 times economic levels, on citrus in McFarland area, Kern County, and extending into Clovis area, Fresno County, and Terra Bella area, Tulare County. About 10,000 acres involved in winter infestation. Damage most serious in younger groves. Controls in progress in about third of acreage. Larvae mining into fruit where fruit clusters or leaves touch. Larval ratio about 2 on foliage to one in fruit; third and fourth instars dominant. (Cal. Coop. Rpt.).

MULBERRY WHITEFLY (*Tetraleurodes mori*) - CALIFORNIA - Adults and immatures of this species and *Tarsonemus setifer* (a tarsonemid mite) heavy in orange trees at Long Beach, Los Angeles County. (Cal. Coop. Rpt.).

CITRUS FLAT MITE (*Brevipalpus lewisi*) - CALIFORNIA - Medium on citrus at Lamont, Kern County. Infesting more localities in State. (Cal. Coop. Rpt.).

ORNAMENTALS

HOLLYHOCK WEEVIL (Apion longirostre) - WYOMING - Adults medium on hollyhock at Pine Bluffs, Laramie County. Collected by E.A. Cook July 16, 1968. Determined by R.E. Warner. This is a new State record. (Parshall).

AN APHID (Neophyllaphis podocarp) - MISSISSIPPI - Light on podocarpus at Gulfport, Harrison County. Collected by J.W. Impson October 24, 1968. Determined by H.B. Boudreaux. This is a new State record. (Impson).

YELLOW SCALE (Aonidiella citrina) - FLORIDA - Taken on crapemyrtle in nursery at Winter Haven, Polk County, for a new Florida Department of Plant Industry host record. (Schmidt).

BAGWORM (Thyridopteryx ephemeriformis) - OKLAHOMA - Eggs in 32 of 50 bags checked in Stillwater, Payne County. Parasitic larvae in 2 bags. (Okla. Coop. Sur.).

FOREST AND SHADE TREES

JEFFREY PINE BEETLE (Dendroctonus ponderosae) - CALIFORNIA - Killing old growth Jeffrey pines in groups of 2-4 in 160-acre stand in Snow Valley area of Arrowhead District in San Bernardino National Forest. Trees weakened by mistletoe and possible needle miner infestation. (Hamburger, USFS).

DOGWOOD BORER (Thamnosphesia scitula) - ALABAMA - Very small to full-grown larvae feeding in dogwoods on lawns and in street plantings throughout State. Larvae 1-20 per tree in previously injured trees. Larvae in half of all trees examined in Lee County. (McQueen).

MAN AND ANIMALS

SCREW-WORM (Cochliomyia hominivorax) - Total of 26 cases reported in U.S. December 8-14 as follows: TEXAS - Brooks 2, Dimmit 3, Duval 1, Hidalgo 3, Kinney 1, Maverick 2, Medina 3, Starr 1, Val Verde 5, Webb 2; CALIFORNIA - Riverside 2; ARIZONA - Maricopa 1. Total of 881 cases reported in portion of Barrier Zone in Republic of Mexico December 1-13 as follows: Baja California 10, Territorio sur de Baja California 120, Sonora 342, Chihuahua 93, Coahuila 99, Nuevo Leon 123, Tamaulipas 94. Total of 77 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released December 8-14: Texas 55,968,000; Arizona 1,000,000; California 300,000; Mexico 44,060,000. (Anim. Health Div.).

COMMON CATTLE GRUB (Hypoderma lineatum) - TEXAS - Up to 15 per head on cattle in Nolan County. (Green).

A NOSE BOT FLY (Cephenemyia jellisoni) - TEXAS - Light in nostrils of deer killed at Seguin, Guadalupe County. (New).

CATTLE LICE - ALABAMA - Sprays required on some Bibb County herds. (Odom).

A CHEWING LOUSE (Tricholipeurus virginianus) - OKLAHOMA - Averaged 1 per hair part on 2 deer checked in Payne County. (Okla. Coop. Sur.).

HARD-BACKED TICKS - OKLAHOMA - All stages of Dermacentor albipictus (winter tick) very heavy on cattle in several areas of Payne and southern Noble Counties. Mostly this species on two deer checked in Payne County. Ixodes scapularis (black-legged tick) light in area. (Okla. Coop. Sur.). TEXAS - D. nigrolineatus heavy on cattle inspected in Nolan County. (Green).

EAR TICK (Otobius megnini) - TEXAS - Light on cattle inspected in Nolan County. (Templeton, Boring).

STORED PRODUCTS

CONFUSED FLOUR BEETLE (Tribolium confusum) - NEW MEXICO - This species and Plodia interpunctella (Indian-meal moth) mostly very light to light in commercial grain and feed storage facilities checked in Quay County. (Mathews).

BENEFICIAL INSECTS

CONVERGENT LADY BEETLE (Hippodamia convergens) - NEW MEXICO - Adults, mostly this species, averaged about 3 per row foot in Chaves County barley. (Mathews). OKLAHOMA - Occasional larva, 0-1 per row foot, active on wheat in Kingfisher, Garfield, and Major Counties. (Okla. Coop. Sur.).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

PINK BOLLWORM (Pectinophora gossypiella) - ARIZONA - Larvae ranged 6-50 per lint cleaner checked at Yuma, Yuma County. (Ariz. Coop. Sur.).

LIGHT TRAP COLLECTIONS

FLORIDA - Gainesville - 12/8-12, BL - Armyworm (Pseudaletia unipuncta) 1, black cutworm (Agrotis ipsilon) 2, granulate cutworm (Feltia subterranea) 1. Monticello - 12/5-11, 2BL - Armyworm 17, black cutworm 13, cabbage looper (Trichoplusia ni) 1, corn earworm (Heliothis zea) 2, tobacco budworm (H. virescens) 1, variegated cutworm (Peridroma saucia) 6, yellow-striped armyworm (Prodenia ornithogalli) 12. TEXAS - Brownsville - 12/7-13, 2BL, 47-80°F, precip. 0.01 - Armyworm 26, black cutworm 14, granulate cutworm (Feltia subterranea) 1, variegated cutworm 9, yellow-striped armyworm 1. MISSISSIPPI - Stoneville - 12/7-13, BL, 25-65°F., precip. 1.18 - Armyworm 3, black cutworm 11, granulate cutworm 1.

HAWAII INSECT REPORT

Sugarcane - SUGARCANE BUD MOTH (Ereunetis flavistriata) damage moderate to sugarcane buds at Kekaha, Kauai. (Ota).

Pasture - Larvae of a GRASS WEBWORM (Herpetogramma licarsisalis) trace and adults light in 100 acres of heavily damaged Kikuyu grass pasture at Kipu, Kauai. All eggs collected in pasture parasitized by Trichogramma semifumatum (a minute egg parasite). (Sugawa, Nakao).

General Vegetables - PEPPER WEEVIL (Anthonomus eugenii) light to moderate on scattered bell pepper plantings on Oahu. SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) moderate in localized portion of sweetpotato field at Kahaluu, Oahu. (Sato).

Fruits and Nuts - Heavy PACIFIC BEETLE COCKROACH (Diploptera punctata) nymphal and adult infestations caused moderate to heavy damage on young leaves and stems of backyard orange trees and light foliar damage on pineapple plants in Haiku, Maui. (Doi). COCONUT SCALE (Aspidiotus destructor) heavy on several trees along highway near Honolulu International Airport and on few trees at Koko Head, Oahu. Dark, yellow leaves evident. Remains light to moderate on some trees in Kaneohe, Kailua, Moanalua, Aiea, and the leeward coast of Oahu. FLORIDA RED SCALE (Chrysomphalus aonidum) and an ARMORED SCALE (Phenacaspis cockerelli) light to heavy and yellowing foliage in various areas. (Funasaki). A NOCTUID MOTH (Phlegetonia delatrix) continues to appear on mountain-apple on Maui. Larval damage moderate to young foliage of backyard trees in Haiku and moderate to severe in Pukalani and Hamoa. (Doi).

Shade Trees - An ARMORED SCALE (Clavaspis herculeanus) heavy on terminals of monkeypod trees at Honolulu, Oahu. Previously recorded only from plumeria and macadamia nut in State. (Shiroma, Olson).

Man and Animals - MOSQUITOES - Collected 233 Aedes vexans nocturnus and 17,489 Culex pipiens quinquefasciatus in 49 light traps on Oahu during November. A. vexans nocturnus light in all areas; C. pipiens quinquefasciatus heaviest (average 1,763 per trap) at Kailua. (Mosq. Cont. Br., Dept. of Health).

Miscellaneous Insects - Adults of a GRASSHOPPER (Oedaleus abruptus) light and widespread in grassy areas at Hickam Air Force Base, Honolulu, Oahu; early instars reappearing in some areas. (Olson).

INSECT DETECTION

New State Records

A GRASSHOPPER (*Stethophyma lineatum*) - OREGON - Found about edges of sphagnum bogs in Crater Lake National Park and at Four Mile Lake, Klamath County, in August 1968. Collected by K. Goeden, A.B. Gurney, and R.L. Westcott. Determined by A.B. Gurney. (Westcott).

A GRASSHOPPER (*Melanoplus siskiyou*) - OREGON - Collected in September 1968 at Wrangle Gap Camp in Siskiyou Mountains, Jackson County, by K. Goeden, A.B. Gurney, and R.L. Westcott. Determined by A.B. Gurney. (Westcott).

A GRASSHOPPER (*Acroloplides tenuipennis*) - OREGON - Collected near a hot springs 15 miles northwest of Vale, Malheur County, in August 1965 by K. Goeden, A.B. Gurney, and R.L. Westcott. Determined by A.B. Gurney. (Westcott).

HOLLYHOCK WEEVIL (*Apion longirostre*) - WYOMING - On hollyhock at Pine Bluffs, Laramie County. Collected by E.A. Cook July 16, 1968. Determined by R.E. Warner. (p. 1139).

AN APHID (*Neophyllaphis podocarpi*) - MISSISSIPPI - On podocarpus at Gulfport, Harrison County. Collected by J.W. Impson October 24, 1968. Determined by H.B. Boudreaux. (p. 1139).

New County Record

WESTERN CORN ROOTWORM (*Diabrotica virgifera*) - MISSOURI - Moniteau County. (p. 1137).

Weather of the Week continued from page 1136.

and the blustery winds made highway travel treacherous. Strong southerly winds gusting to more than 60 m.p.h. kicked up the dust in the central Great Plains ahead of the storm. As the storm approached, freezing rain and drizzle, mixed with snow, slicked the highways, creating hazardous driving conditions. Thunderstorms occurred some places along the leading edge of the cold air. The storm became a severe blizzard in the northern and central Great Plains with heavy snow, winds gusting to 50 m.p.h. or more, and rapidly falling temperatures. Snow accumulated to 9-14 inches in Minnesota from Fergus Falls to Crane Lake, to 10-20 inches in the Adirondack Mountains in New York, and to 20-30 inches in the White Mountains in northern New Hampshire.

TEMPERATURE: Cold air lay over the Deep South early in the week. Raleigh, North Carolina, registered 16 degrees on Monday morning, December 9. Subfreezing temperatures occurred in northern Florida and subzero temperatures were recorded in New York, New England, and by Wednesday morning, in northern Pennsylvania. In sharp contrast, southerly winds brought mild weather to mid-America. Chadron, Nebraska, warmed to 66 degrees on Tuesday afternoon, 10 degrees warmer than Jacksonville, Florida. The storm passage brought a quick change to the Great Plains. The temperature at Des Moines, Iowa, fell from 64° Thursday afternoon to 12° Friday morning. Subzero temperatures occurred from Montana to Minnesota and in the Rockies southward to northern New Mexico. Southerly winds brought rapid warming to the East on Thursday and Friday. New York City and Philadelphia registered 60° on Friday. Sharp cooling accompanied the weekend cold front with subfreezing temperatures occurring as far south as the Florida Everglades. In parts of the East, the weather was the coldest since February, and one of the coldest December weeks of record. (Summary supplied by Environmental Data Service, ESSA.)

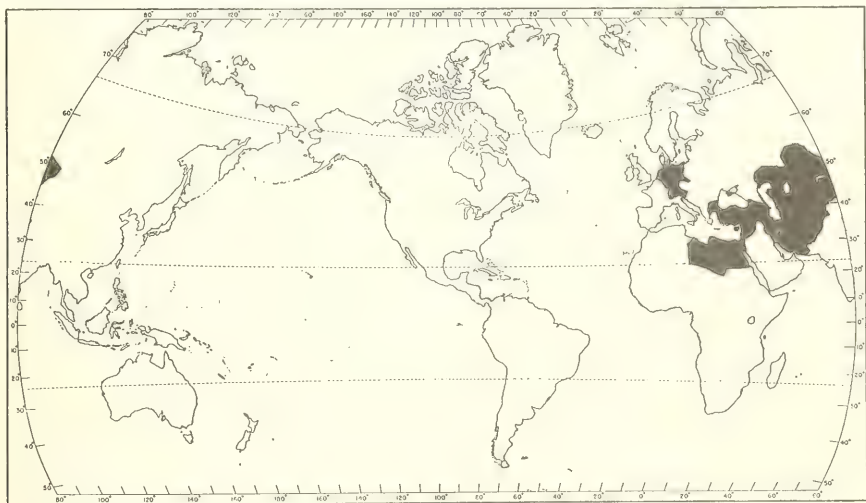
INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

FLAT RED MITE (Cenopalpus pulcher (Canestrini and Fanzago))

Economic Importance: The species heavily infests apple in Iran and stone fruits in Libya. In 1959 the flat red mite was widespread on apples and pears in Turkey where it caused much concern. Considerable damage to apple trees occurred in Cyprus where extremely high populations were noted at 2,000-4,000 feet elevation. An average of 100 mites per leaf has been observed on a heavily infested tree. In some areas C. pulcher is found only on neglected apple trees. Damage to buds and flowers of quince has been reported from Libya.

Distribution: Afghanistan, Austria, Bulgaria, Cyprus, Egypt, Germany, Iran, Israel, Lebanon, Libya, Netherlands, Syria, Switzerland, Turkey, and USSR (known only in parts of Crimea, Transcaucasia and Soviet Central Asia where it is widely distributed).

Hosts: Apple, pear, quince, loquat, poplar, willow, damson, walnut, and dogwood



General Distribution of Cenopalpus pulcher (Canestrini and Fanzago)

Life History and Habits: Under conditions in England females overwinter in cracks in the bark but are active early in the spring. Although they wander around on the leaves in April, they do not completely move there until May. Egg laying begins late in April on the bark. Later, eggs are deposited on the midrib or leaf veins, usually underneath the leaf hairs. Oviposition continues until the middle of July when the overwintered females die. Hatching occurs at the end of June and nymphs mature in late July. For a time males outnumber females but after mating in August and September, the males gradually die off. Only one generation a year is recorded in England but two are known in Bulgaria.

Description: ADULT - Length 0.32 mm. Width 0.16 mm. Female bright red with a rectangular, flattened body and very short legs. Hairs on head sparse. Male - Shorter and paler in color. Abdomen almost transparent and curving upwards. NYMPH - Paler in color. EGG - Oval, bright red. Length 0.11 mm.

Interceptions: The species has been intercepted at U.S. ports of entry 18 times in baggage, cargo, mail, plane and ship stores.



Female



Male



Nymph

Cenopalpus pulcher (Canestrini and Fanzago)

Courtesy of E. W. Baker

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PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearinghouse and does not assume responsibility for accuracy of the material.

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Hyattsville, Maryland 20782

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG increased in wheat past 2 weeks in southwestern Oklahoma. (p. 1147).

CLOVER LEAFHOPPER increased sharply in alfalfa in Alachua County, Florida. (p. 1148).

LOCUST BORER killed or severely damaged black locust in Jefferson National Forest of Virginia. (p. 1149).

Heavier-than-normal WINTER TICK infestations killed occasional horses in southeastern Oklahoma. (p. 1149).

Detection

New State records include a WEEVIL in Arkansas (p. 1148), a POWDER-POST BEETLE in New Mexico (p. 1149), and a TEPHRITID FLY in Wisconsin (p. 1152).

For new county records see page 1151.

Special Reports

Adult European Cherry Fruit Fly Detection Survey in Wisconsin. (p. 1152).

Insects Not Known to Occur in the United States

CABBAGE CATERPILLAR (Crocidolomia binotalis Zeller). (pp. 1153-1154).

Reports in this issue are for week ending December 20 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING DECEMBER 23

HIGHLIGHTS: Four winter storms brought snow, sleet, or freezing rain to most Northern States. Generous rains fell in parts of the Deep South. Bitter cold penetrated far southward in the intermountain Plateau and the Rocky Mountains.

PRECIPITATION: Snow diminished in the Northeast early in the week as a storm moving along the coast of Maine lost its punch. Meanwhile, a disturbance developed in the central Rocky Mountains and, fed by moist gulf air, blanketed the Great Plains from the Dakotas to the Texas Panhandle and eastward to the Great Lakes and the Ohio River Valley with heavy snow. Winds in parts of the Central Great Plains, gusting to 60 m.p.h., piled the snow in deep drifts, closing many roads. The near zero visibility in the blowing snow hampered the use of the roads which remained open. By Thursday morning, snow depths ranged from 14 to 15 inches in north-central Kansas, 5 to 8 inches across Minnesota and Wisconsin, and to 13 inches in Upper Michigan. Snow mixed with sleet or freezing rain fell along the southern edge of the snow belt. While this storm was most severe, a third storm gained strength in the Far West. It produced heavy snow over the interior sections of the West and along the coast as far south as Eureka, California, with rain farther south along the coast. The two storms whitened all States west of the Mississippi River except Oklahoma, Texas, and the southern portions of California and Arizona. After leaving heavy snow in the central and southern Rockies, this third storm moved to the Great Plains where it dumped from 1 to 2 feet of snow from the central Great Plains to Upper Michigan. It became a howling blizzard and the 60 m.p.h. winds in the northern Great Plains whipped the snow into drifts from 4 to 10 feet deep at many places and to 20 feet deep at a few places. While the blizzard was raging in the Great Plains, moving toward Wisconsin, a fourth storm produced 60 to 90 m.p.h. winds and heavy rain along the Washington and Oregon coast, and heavy snow over much of the Northwest.

TEMPERATURE: Temperatures plummeted far below normal over most of the western half of the Nation. Nevada, Utah, and the Rocky Mountain States averaged 10° to 15° below normal. Slight warming occurred over the eastern half of the United States during the week, followed by weekend cooling. A wide band from eastern Texas to the Great Lakes averaged slightly above normal. The slow warming in the East was insufficient to offset the earlier cold weather. The eastern States from Alabama and Florida to southern New England averaged slightly cooler than normal. (Summary supplied by Environmental Data Service, ESSA.)

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

GREENBUG (Schizaphis graminum) - OKLAHOMA - Increased in wheat in southwest area last 2 weeks, especially in Tillman County. Counts per row foot ranged 20-80 in 4 fields in Tillman County, 15-25 in 3 fields in Cotton County, 20-50 in 7 fields in Jackson County, and averaged 6 in Crescent area, Logan County. (Okla. Coop. Sur.). ARKANSAS - Survey continues negative in northwest area. (Boyer). CALIFORNIA - Light on barley at Selma, Fresno County. Quite damaging to sorghum in county for first time this summer. Previously rare in county. (Cal. Coop. Rpt.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - FLORIDA - All stages still light but increasing on alfalfa at Gainesville, Alachua County. (Mead).

TOBACCO BUDWORM (Heliothis virescens) - CALIFORNIA - Medium on geranium nursery stock at Colma, San Mateo County. (Cal. Coop. Rpt.).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - MISSOURI - Fall abundance survey conducted on corn in 8 of 9 crop reporting districts. Overwintering populations higher in all districts than in 1967. High overwintering populations followed rather light first brood throughout most of State. Overwintering populations heaviest on record for southwest and west-central districts. (Munson).

SMALL GRAINS

ENGLISH GRAIN APHID (Macrosiphum avenae) - MISSISSIPPI - Adults and nymphs light, 20 per 100 sweeps, in winter wheat in Clay County. (Dinkins, Dec. 13). ARKANSAS - Light, 5-10 per row foot, in small grain in northwest area. (Boyer).

AN APHID (Rhopalosiphum padi) - OKLAHOMA - Ranged 0-8 per row foot in wheat in Jackson, Tillman, and Cotton Counties. (Okla. Coop. Sur.).

WINTER GRAIN MITE (Penthaleus major) - OKLAHOMA - Ranged 50-150 per row foot in most wheat checked in Jackson, Tillman, and Cotton Counties. (Okla. Coop. Sur.).

TURF, PASTURES, RANGELAND

FALSE CHINCH BUG (Nysius ericae) - UTAH - Extremely numerous in Russian thistle and halogeton range areas around Wendover, Tooele County. (Thornley, Dec. 16).

RHODES-GRASS SCALE (Antonina graminis) - CALIFORNIA - This species and Odonaspis ruthae (an armored scale) present on dwarf tiffgreen Bermuda grass at Oceanside, San Diego County. (Cal. Coop. Rpt.).

A BILLBUG (Sphenophorus phoeniciensis) - CALIFORNIA - Adults heavy in lawn at Redding, Shasta County. (Cal. Coop. Rpt.).

FORAGE LEGUMES

PEA APHID (Acyrtosiphon pisum) - ARKANSAS - Increased slightly, 12-15 per square foot, in vetch in northwest area. (Boyer). MISSISSIPPI - Adults and nymphs moderate, 15-20 per square foot, in Lee County alfalfa. (Dinkins, Dec. 13). FLORIDA - Continues very light with no apparent increase on alfalfa at Gainesville, Alachua County. (Mead).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - FLORIDA - Adults increased slightly, 9 per 100 sweeps, in alfalfa at Gainesville, Alachua County. (Mead).

LEAFHOPPERS - FLORIDA - Aceratagallia sanguinolenta adults increased sharply, 17 per 100 sweeps, in alfalfa compared with 2 weeks ago and Cuerna costalis adults increased slightly, 11 per 100 sweeps, in alfalfa at Gainesville, Alachua County. (Mead).

PLANT BUGS - FLORIDA - Lygus lineolaris and Taylorilygus pallidulus apparently decreased on alfalfa probably due to freezing weather at Gainesville, Alachua County. (Mead). VIRGINIA - L. lineolaris adults active, 5 per 100 sweeps, on red clover in Montgomery County. (Allen, Dec. 12).

ALFALFA WEEVIL (Hypera postica) - INDIANA - Eggs per 100 stems averaged 42 at Farmland and 98 at Cambridge City in alfalfa collected December 2 in east-central district. (Huber). ARKANSAS - Survey continues negative in State. (Boyer).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - FLORIDA - Adults 10 per 100 sweeps in alfalfa at Gainesville, Alachua County. (Mead).

BEET ARMYWORM (Spodoptera exigua) - CALIFORNIA - This species, Estigmene acrea (salt-marsh caterpillar), Trichoplusia ni (cabbage looper), and Lygus sp. (a lygus bug) medium on cowpea plantings at Holtville, Imperial County. (Cal. Coop. Rpt.).

CITRUS

CITRUS RED MITE (Panonychus citri) - CALIFORNIA - Medium on mixed citrus nursery stock at Roseville, Placer County. Common on citrus and other hosts in northern area. (Cal. Coop. Rpt.).

ORNAMENTALS

A WEEVIL (Scyphophorus acupunctatus) - ARKANSAS - Collected on yucca at Mt. Gaylor, Crawford County. Determined by R.E. Warner. This is a new State record. (Rouse).

A NOCTUID MOTH (Autographa biloba) - CALIFORNIA - Larvae damaged geranium nursery stock at Cypress, Orange County. (Cal. Coop. Rpt.).

ARMORED SCALES - CALIFORNIA - Aonidiella aurantii (California red scale) heavy and general on iris nursery stock at Oroville, Butte County. Aspidiotus perniciosus (San Jose scale) heavy on pyracantha at Planada. (Cal. Coop. Rpt.). FLORIDA - All stages of Fiorinia theae (tea scale) severe on 250 camellia plants inspected at Apopka, Orange County. (Kipp). All stages of Gymnaspidium aechmeae moderately severe on 6,000 bromeliads in nursery at Homestead, Dade County. (Knowles, Dec. 13).

HEMISPHERICAL SCALE (Saissetia coffeae) - CALIFORNIA - Nymphs and adults heavy on sago-palm nursery stock at Roseville, Placer County. (Cal. Coop. Rpt.).

A MEALYBUG (Trionymus dimidatus) - CALIFORNIA - Heavy on phormium nursery stock at Kentfield, Marin County. (Cal. Coop. Rpt.).

FOREST AND SHADE TREES

A SOFT SCALE (Toumeyella pinicola) - CALIFORNIA - Heavy on pine nursery stock at Novato, Marin County. (Cal. Coop. Rpt.).

A BARK BEETLE (Pityophthorus nitidulus) - CALIFORNIA - Adults medium on pine nursery stock at Soquel, Santa Cruz County. (Cal. Coop. Rpt.).

A POWDER-POST BEETLE (Trogoxylon aequale) - NEW MEXICO - Collected from dry branches of salt cedar (Tamarix sp.) near Bernardo, Socorro County, by J.G. Watts June 27, 1968. This is a new State record. (Watts).

LOCUST BORER (Megacyllene robiniae) - VIRGINIA - Damage severe to black locust in John's Creek area of Jefferson National Forest in Craig County; killed or damaged most of old trees. (Kosztarab, Nov. 30).

A PIT SCALE (Asterolecanium minus) - CALIFORNIA - Heavy on live oak trees at Durham, Butte County. Damage severe on oaks in some areas. (Cal. Coop. Rpt.).

MAN AND ANIMALS

SCREW-WORM (Cochliomyia hominivorax) - Total of 23 cases reported in U.S. December 15-21 as follows: TEXAS - Atascosa 1, Bandera 1, Brooks 1, Hidalgo 2, Jim Hogg 2, Maverick 1, Starr 2, Uvalde 1, Val Verde 1, Webb 7, Zapata 3, Unknown 1. Sterile screw-worm flies released: Texas 35,168,000; Arizona 800,000; California 1,100,000; Mexico 42,000,000. (Anim. Health Div.).

WINTER TICK (Dermacentor albipictus) - OKLAHOMA - Heavier than normal on cattle, horses, and deer in Pushmataha, McCurtain, Choctaw, Le Flore, and Latimer Counties. Heavy infestations occasionally killed horses, made some deer unfit for food. Continues heavy on cattle in Lake Carl Blackwell area of Payne and Noble Counties; moderate on cattle and horses in Adair and Cherokee Counties. (Okla. Coop. Sur.).

HOUSEHOLDS AND STRUCTURES

PACIFIC DAMPWOOD TERMITE (Zootermopsis angusticollis) - CALIFORNIA - Heavy in wood platforms of railroad station at Richmond, Contra Costa County. More frequent in wood construction than in past years. (Cal. Coop. Rpt.).

A POWDER-POST BEETLE (Lyctus brunneus) - MARYLAND - Infested hardwood floors in home near Columbia, Prince Georges County. (U. Md., Ent. Dept.).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Found in 8 fields around Lubbock Municipal Airport during November; infestations light along Yellowhouse Canyon. All traps removed in El Paso Valley area. Sixth application on Unit III of control zone completed November 4; treated 309,807 aggregate acres. Remains heavy in some fields in Kent and Dickens Counties. (PPC South. Reg.).

GYPSY MOTH (Porthetria dispar) - Defoliated acreage by State as determined by aerial survey during summer 1968: CONNECTICUT 16,416; MAINE 777; MASSACHUSETTS 3,925; NEW HAMPSHIRE 5,830; NEW JERSEY 5,025; NEW YORK 47,525; RHODE ISLAND 565; PENNSYLVANIA 60. Egg masses ranged 100-10,000 per acre on 9,600 acres at Ledyard, Connecticut, in November. Male recovered from trap near Grindstone, Maine, about 25 miles north of quarantine line. Egg masses found at 2 additional locations in Atlantic County, 2 in Cape May County, and one in Gloucester County during survey of positive trap sites in southern New Jersey. Over 200 egg masses noted in area 3,500 feet from 1967 spray block at Gloucester County location. (PPC East Reg.).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - SOUTH CAROLINA - Extensions found in Dillon and Florence Counties. Treated about 3,600 acres in Horry County. GEORGIA - Reinfested about 30,000 acres in Butts County during November. Treated 504,760 acres at Savannah, 95,666 acres at Waycross, and 76,488 acres at Macon. FLORIDA - A few active mounds noted at several previously treated sites in Hardee and Manatee Counties. Aerially treated 347,766 acres of Tampa eradication area during period. ALABAMA - Additional infestations in Etowah and Marshall Counties. First treatment applied to 2,725 acres and repeat application made on 765 acres. MISSISSIPPI - No new infestations on 10,600 acres surveyed in Benton, Lee, Sharkey, Tippah, and Union Counties. Numerous small mounds in treated area of Covington, Forrest, Jefferson Davis, and Lamar Counties. Treated about 2,750 acres in Jefferson Davis County and 190 acres of schoolgrounds in Jones County. LOUISIANA - Treated about 7,095 acres during November. (PPC South. Reg.).

MEXICAN FRUIT FLY (Anastrepha ludens) - TEXAS - Second native fly in State this season collected in Webb County. Over 6,200 trap inspections made in Brooks, Cameron, Dimmit, Duval, Hidalgo, Jim Hogg, Jim Wells, La Salle, Maverick, Starr, Webb, Willacy, Zapata, and Zavala Counties. (PPC South. Reg., Nov. Rpt.). CALIFORNIA - Unusual increase in sterile adult collections occurred at previously unsuccessful trap locations up to 20 miles from pupal release sites in Mexico. Collected 380 sterile adults at 78 trap locations during season. No native adults taken in 1968. (PPC West. Reg., Nov. Rpt.).

PINK BOLLWORM (Pectinophora gossypiella) - TEXAS - Found in Brazos and Robertson Counties for first time this season. Generally light in all areas; heavy in a few isolated spots. No moths taken in sex lure traps in Harrison County during November. About 98 percent of stalks plowed up in several districts. (PPC South. Reg.). NEW MEXICO - About 50 percent of full-grown larvae dead in cocoons in southern Dona Ana County. (Campbell). ARIZONA - Larval increase noted in lint cleaners during 447 inspections in November. More numerous than in 1967 in some cases. Shredding, diskling, and plowing well underway in western and central areas. CALIFORNIA - Additional sterile moth recovered in Release Zone IV in Kern County; total for season 20. Harvest about 80 percent complete in Kern County; 20 percent of acreage shredded and 10 percent disked or plowed. Collected 3,247 moths in 100 sex lure traps in Coachella Valley and 302 in 10 traps in Palo Verde Valley, Riverside County, during November. Harvest 85-90+ percent complete in Riverside County. Shredded about 36 percent of acreage in Coachella Valley and 45 percent in Palo Verde Valley. Boll infestations continued moderate to heavy in Palo Verde Valley with some "hot spots" noted. Trapped 20 moths in 5 sex lure traps in November at Bard, Imperial County. Larval infestation almost 100 percent in top green bolls in scattered late fields in Imperial Valley; 144 moths taken in 20 sex lure traps during month. Harvest 90+ percent complete at Bard and 60 percent complete in Imperial Valley; 30 percent of acreage plowed at Bard and 35 percent shredded and 10 percent plowed in Imperial Valley. No moths caught in 5 traps during period near Needles, San Bernardino County. Harvest 50 percent complete in Sandy Valley. Infestation 99 percent in remaining top bolls at Borrego, San Diego County; moth collections declined to very few in area. NEVADA - Recovered 39 larvae from gin trash machine in Pahrump Valley during November. (PPC West. Reg.).

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) - GEORGIA - Infested 3 new properties during November in Decatur County and 2 each in Grady and Ware Counties. MISSISSIPPI - Infested 8 new properties during inspection of 158 bushels of potatoes and 75 acres on 543 properties in November. LOUISIANA - Infested 3 new properties in Franklin Parish and a few properties in eradication areas of Sabine and Vernon Parishes. (PPC South. Reg.).

WHITE-FRINGED BEETLES (Graphognathus spp.) - ALABAMA - Infested 12,080 acres in 17 counties during November; treated 334 acres in Marshall County. MISSISSIPPI - Infested 100 acres in each of Alcorn and Benton Counties. (PPC South. Reg.).

HAWAII INSECT REPORT

General Vegetables - BEAN FLY (Melanagromyza phaseoli) larvae and pupae light on Desmodium canum (a weed) seedlings at Wahiawa, Oahu. Nanea (Vigna marina) and wild bean (Phaseolus lathyroides) were only previously recorded weed hosts. (Olson). GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) continues moderate to heavy on most snap beans on Oahu. CARMINE SPIDER MITE (Tetranychus cinnabarinus), LEAF MINER FLIES (Liriomyza spp.), and M. phaseoli generally trace to light in all snap beans on Oahu. Liriomyza spp. damage heavy on carrot seedlings at Kealahou, Maui. Larvae and adults very heavy despite regular sprays. (Hori).

Fruits, Forest, and Shade Trees - A BARK BEETLE (Xylosandrus compactus) light to medium on opiuma (Pithecellobium dulce), kukui (Aleurites moluccana), Java-plum (Eugenia cumini), Cayene vervain (Stachytarpheta australis), hairy abutilon (Abutilon molle), Crotalaria sp., monkeypod (Samanea saman), passion-fruit (Passiflora edulis), apple of Sodom (Solanum sodomaeum), and chinaberry (Melia azedarach) at Wailuku, Maui. All are new host records. (Miyahira). RED-BANDED THRIPS (Selenothrips rubrocinctus) adults heavy on Java-plum and false kamani (Terminalia catappa) foliage at Hana, Maui; moderate on T. catappa at Waiehu. Heavy on T. catappa in many areas of Kauai. (Miyahira et al.).

Beneficial Insects - Adults of a NOCTUID MOTH (Hypena strigata) light and larvae medium at Keokea, Maui. Defoliation up to 33 percent in spots. (Ah Sam). LANTANA LEAF MINER (Cremastobombycia lantanella) larvae heavy on lantana at Ulupalakua, Maui. (Miyahira).

INSECT DETECTION

New State Records

A WEEVIL (Scyphophorus acupunctatus) - ARKANSAS - Collected on yucca at Mt. Gaylor, Crawford County. Determined by R.E. Warner. (p. 1148).

A POWDER-POST BEETLE (Trogoxylon aequale) - NEW MEXICO - Collected from dry branches of salt cedar (Tamarix sp.) near Bernardo, Socorro County, by J.G. Watts June 27, 1968. (p. 1149).

A TEPHRITID FLY (Paroxyna albiceps) - WISCONSIN - Collected on cherry in Door County in summer 1968. (p. 1152).

New County Records

✓CHERRY FRUIT FLY (Rhagoletis cingulata) - WISCONSIN - Kewaunee County. (p. 1152).

A PLATYSTOMATID FLY (Rivellia melliginis) - WISCONSIN - Door County. (p. 1152).

AN OTITID FLY (Pseudotephritis vau) - WISCONSIN - Door County. (p. 1152).

LIGHT TRAP COLLECTIONS

FLORIDA - Gainesville - 12/13-19, BL - Armyworm (Pseudaletia unipuncta) 2, black cutworm (Agrotis ipsilon) 5, granulate cutworm (Feltia subterranea) 5, yellow-striped armyworm (Prodenia ornithogalli) 3. TEXAS - Brownsville - 12/14-20, 2 BL, 43-80°F., precip. 0.05 - Armyworm 37, black cutworm 28, cabbage looper (Trichoplusia ni) 4, corn earworm (Heliothis zea) 2, tobacco budworm (H. virescens) 1, variegated cutworm (Peridroma saucia) 21, yellow-striped armyworm 5.

Adult European Cherry Fruit Fly Detection Survey in Wisconsin

Philip W. Smith 1/

A cooperative Federal and State survey was conducted during 1968 in the major sour cherry commercial orchard area of Wisconsin which included the northern part of Kewaunee County and all of Door County. The main objective of the survey was to detect adults of European cherry fruit fly (Rhagoletis cerasi (L.)), if present. This damaging pest of cherry fruit in Europe is commonly intercepted at U.S. ports of entry by Plant Quarantine inspectors. During June, July, and August, 240 sticky traps using ammonium carbonate bait were hung in cherry trees at 59 locations and serviced. A total of 4,131 flies were examined. No R. cerasi was found but cherry fruit fly (R. cingulata (Loew)), black cherry fruit fly (R. fausta (O.S.)), and apple maggot (R. pomonella (Walsh)) were caught.

Determinations of R. cingulata in 1968 are the first authentic records of cherry fruit fly for Kewaunee County (Casco Township) and the townships of Liberty Grove and Washington Island in Door County.

Determinations of black cherry fruit fly in 1964 and 1965 exist for the townships of Sturgeon Bay and Egg Harbor, respectively, but 1968 determinations of this species are new records for Liberty Grove and Gibraltar Townships in Door County.

The determination of Paroxyna albiceps (Loew) (a tephritid fly) from Door County constitutes a new record for Wisconsin. Rivellia melliginis (Fitch) (a platystomatid fly) and Pseudotephritis vau (Say) (an otitid fly) were trapped in Door County for new county records.

Aside from the new distribution records and the failure to detect R. cerasi in the State, information gained from the survey will be a factor in establishing changes in cherry insect control recommendations in Wisconsin for 1969.

1/ Wisconsin State Department of Agriculture, Plant Industry Division.

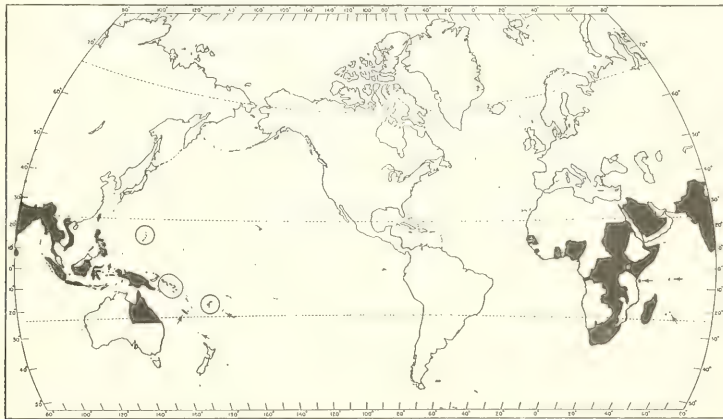
INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

CABBAGE CATERPILLAR (Crocidolomia binotalis Zeller)

Economic Importance: This species was one of the worst pests of cabbage, mustard, and other related plants in the Philippine Islands in 1925. Often whole plots were destroyed. *C. binotalis* larvae were especially damaging to cabbage, cauliflower, turnip, and radish in the Cape Province area of the Republic of South Africa in the same year. The larvae prefer to feed on the succulent young leaves and buds. The plants are severely mutilated, stunted, or completely devoured. The larvae also bore into the heads of cabbage and feed inside until time to pupate. Young larvae feed gregariously on the lower leaf surface and soon scatter over the plants, spinning a thick web over the part being fed upon. Large holes are eaten in the leaves and the crown or heart is riddled. Leaf edges are often scalloped.

Distribution: Australia (Queensland), Burma, Ceylon, Congo (Kinshasa), Fiji Islands, Ghana, Guam, India, Indonesia, Kenya, Malagasy Republic, Malawi, Mariana Islands, Mauritius, New Caledonia, New Guinea, Nigeria, Norfolk Island, Pakistan, Philippines, Republic of South Africa, Saudi Arabia, Senegal, Seychelles, Sierra Leone, Solomon Islands, Somalia, Southern Rhodesia, Sudan, Taiwan, Thailand, Tonga, Uganda, Viet-Nam, Zambia, and Zanzibar.

Hosts: Cabbage, cauliflower, Chinese cabbage, Chinese radish, India mustard, mustard, radish, turnip, other crucifers, nasturtium, and various flowering plants.



General Distribution of Crocidolomia binotalis Zeller

Life History and Habits: The biology under conditions in the Philippine Islands is as follows: Eggs are laid in clusters of 21-101 in a scale-like arrangement on the lower leaf surface. Hatching occurs in 3-5 days and the young larvae begin to feed on the leaves. Larval development includes 4 instars and lasts about 11 days. Full-grown larvae dig into the soil and then pupate in earthen cells. Adult emergence takes place 6-8 days later. Moths are attracted to lights at night but hide under leaves during the day. There may be 3-4 generations during the cabbage-growing period of 95-140 days.

Description: EGG - Width 0.3 mm., length 0.6 mm. Light yellow or greenish-gray, circular, and flattened. LARVA (full grown) - Length 17 mm., width 2.8 mm. Yellowish-green with black thoracic shield. Only primary setae are present. Body with 5 white longitudinal (median lateral) stripes and pair of broad dark-green bands on back. Each side of most body segments with 3 black dots arranged in a triangle; first thoracic and last abdominal segments with 2 dots. PUPA - Length 10 mm., width 3 mm. near head region. Yellowish-brown or pink-brown. ADULT - Length 10 mm. from tip of head to tip of abdomen. Clay-yellow in color. Male with plume-like structure (tuft of long hairs) at costal margin of forewings and with rusty red-brown markings; more distinctly colored than female.



Side and dorsal
views of larva



Ventral and side
views of pupa



Male



Female

Selected References: 1. Sison, P. 1925. Philippine Agr. Rev. 18(4):575-577. 2. Gunn, D. 1925. Jour. Dept. Agr. 11(3):233-239. 3. Fletcher, J. B. 1914. Some South Indian Insects, p. 437. 4. Maxwell-Lefroy, H. 1909. Indian Insect Life. Agr. Res. Inst., Pusa. p. 519. Illustrations from Sison (Philippine Agr. Rev. 1925).

Prepared in Survey and Detection
Operations in cooperation with other
ARS agencies

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